APPENDIX E
First Quarter 2023 Analytical Laboratory Reports, Chain of Custody Forms, and Validation Reports

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81	Outfall 002	570-123414-4	January 10, 2023
82	Outfall 002	570-124245-1	January 14, 2023
83	Outfall 002	570-124247-1	January 15, 2023
84	Outfall 002	570-124247-2	January 15, 2023
85	Outfall 002	570-124247-3	January 15, 2023
86	Outfall 002	570-124869-1	January 20, 2023
87	Outfall 002	570-124887-1	January 21, 2023
88	Outfall 002	570-124887-2	January 21, 2023
89	Outfall 002	570-124887-3	January 21, 2023
90	Outfall 002	570-125743-1	January 30, 2023
91	Outfall 002	570-125840-1	January 31, 2023
92	Outfall 002	570-125840-2	January 31, 2023
93	Outfall 002	570-125840-3	January 31, 2023
94	Outfall 002	570-128840-1	February 24, 2023
95	Outfall 002	570-128840-2	February 24, 2023
96	Outfall 002	570-128840-3	February 24, 2023
97	Outfall 002	570-128844-1	February 23, 2023
98	Outfall 002	570-129813-1	March 3, 2023
99	Outfall 002	570-129852-1	March 4, 2023
100	Outfall 002	570-129852-2	March 4, 2023
101	Outfall 002	570-129852-3	March 4, 2023
102	Outfall 002	570-129988-1	March 6, 2023
103	Outfall 002	570-130108-1	March 7, 2023
104	Outfall 002	570-130108-2	March 7, 2023
105	Outfall 002	570-130108-3	March 7, 2023
106	Outfall 002	570-130858-1	March 10, 2023
107	Outfall 002	570-130860-1	March 11, 2023
108	Outfall 002	570-130860-2	March 11, 2023
109	Outfall 002	570-130860-3	March 11, 2023
110	Outfall 002	570-130860-4	March 11, 2023
111	Outfall 002	570-131815-1	March 20, 2023
112	Outfall 002	570-131940-1	March 21, 2023
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116	Outfall 002	570-133036-1	March 30, 2023
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202	Outfall 009	570-129990-1	March 6, 2023
203	Outfall 009	570-130127-1	March 7, 2023
204	Outfall 009	570-130127-2	March 7, 2023
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206	Outfall 009	570-130856-1	March 10, 2023
207	Outfall 009	570-130862-1	March 11, 2023
208	Outfall 009	570-130862-2	March 11, 2023
209	Outfall 009	570-130862-3	March 11, 2023
210	Outfall 009	570-131814-1	March 20, 2023
211	Outfall 009	570-131938-1	March 21, 2023
212	Outfall 009	570-131938-2	March 21, 2023
213	Outfall 009	570-131938-3	March 21, 2023
214	Outfall 009	570-132955-1	March 29, 2023
215	Outfall 009	570-133059-1	March 30, 2023
216	Outfall 009	570-133059-2	March 30, 2023
217	Outfall 009	570-133059-3	March 30, 2023
218	Outfall 010	570-123417-1	January 10, 2023
219	Outfall 010	570-123417-2	January 10, 2023
220	Outfall 010	570-123417-3	January 10, 2023
221	Outfall 010	570-123653-1	January 11, 2023
222	Outfall 010	570-123653-2	January 11, 2023
223	Outfall 010	570-123653-3	January 11, 2023
224	Outfall 010	570-123653-4	January 11, 2023
225	Outfall 010	570-123653-5	January 11, 2023
226	Outfall 010	570-123653-6	January 11, 2023
227	Outfall 010	570-123653-7	January 11, 2023
228	Outfall 011	570-123256-1	January 8, 2023
229	Outfall 011	570-123256-2	January 8, 2023
230	Outfall 011	570-123256-3	January 8, 2023
231	Outfall 011	570-123391-1	January 10, 2023
232	Outfall 011	570-123391-2	January 10, 2023
233	Outfall 011	570-123391-3	January 10, 2023
234	Outfall 011	570-123391-4	January 10, 2023
235	Outfall 011	570-123391-5	January 10, 2023
236	Outfall 011	570-123391-6	January 10, 2023
237	Outfall 011	570-124229-1	January 15, 2023
238	Outfall 011	570-124392-1	January 17, 2023

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241	Outfall 011	570-124392-4	January 17, 2023
242	Outfall 011	570-124872-1	January 20, 2023
243	Outfall 011	570-124873-1	January 20, 2023
244	Outfall 011	570-124873-2	January 20, 2023
245	Outfall 011	570-124873-3	January 20, 2023
246	Outfall 011	570-129007-1	February 25, 2023
247	Outfall 011	570-129011-1	February 25, 2023
248	Outfall 011	570-129011-2	February 25, 2023
249	Outfall 011	570-129011-3	February 25, 2023
250	Outfall 011	570-129011-4	February 25, 2023
251	Outfall 011	570-131178-1	March 14, 2023
252	Outfall 011	570-131456-1	March 16, 2023
253	Outfall 011	570-131456-2	March 16, 2023
254	Outfall 011	570-131456-3	March 16, 2023
255	Outfall 011	570-131947-1	March 21, 2023
256	Outfall 011	570-132136-1	March 21, 2023
257	Outfall 011	570-132136-2	March 21, 2023
258	Outfall 011	570-132136-3	March 21, 2023
259	Outfall 018	570-122522-1	January 4, 2023
260	Outfall 018	570-122522-2	January 4, 2023
261	Outfall 018	570-122522-3	January 4, 2023
262	Outfall 018	570-123038-1	January 6, 2023
263	Outfall 018	570-123038-2	January 6, 2023
264	Outfall 018	570-123038-3	January 6, 2023
265	Outfall 018	570-123038-4	January 6, 2023
266	Outfall 018	570-123038-5	January 6, 2023
267	Outfall 018	570-123038-6	January 6, 2023
268	Outfall 018	570-123261-1	January 9, 2023
269	Outfall 018	570-123665-1	January 11, 2023
270	Outfall 018	570-123665-2	January 11, 2023
271	Outfall 018	570-123665-3	January 11, 2023
272	Outfall 018	570-123665-4	January 11, 2023
273	Outfall 018	570-124230-1	January 15, 2023
274	Outfall 018	570-124230-2	January 15, 2023
275	Outfall 018	570-124230-3	January 15, 2023
276	Outfall 018	570-124231-1	January 14, 2023
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278	Outfall 018	570-124898-1	January 21, 2023

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 010 - GRAB

JOB NUMBER

570-123417-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

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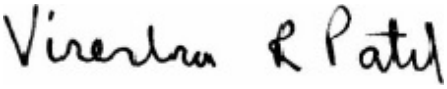
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-123417-1
Project/Site: Boeing SSFL NPDES - Outfall 010 - GRAB

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc. Job ID: 570-123417-1
Project/Site: Boeing SSFL NPDES - Outfall 010 - GRAB

Job ID: 570-123417-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123417-1

Comments
No additional comments.

Receipt
The samples were received on 1/10/2023 5:55 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.3º C.

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-294921. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 1664A: The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-296047.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123417-1
Project/Site: Boeing SSFL NPDES - Outfall 010 - GRAB

Client Sample ID: Outfall010_20230110_Grab
Lab Sample ID: 570-123417-1

No Detections.

Client Sample ID: TB-20230110
Lab Sample ID: 570-123417-3

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: Outfall010_20230110_Grab
Lab Sample ID: 570-123417-1
Date Collected: 01/10/23 08:00
Matrix: Water
Date Received: 01/10/23 17:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			01/10/23 22:33	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			01/10/23 22:33	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			01/10/23 22:33	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			01/10/23 22:33	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/10/23 22:33	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			01/10/23 22:33	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/10/23 22:33	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			01/10/23 22:33	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			01/10/23 22:33	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			01/10/23 22:33	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			01/10/23 22:33	1
Acrolein	ND		5.0	4.6	ug/L			01/10/23 22:33	1
Acrylonitrile	ND		2.0	1.4	ug/L			01/10/23 22:33	1
Benzene	ND		0.50	0.28	ug/L			01/10/23 22:33	1
Bromoform	ND		1.0	0.25	ug/L			01/10/23 22:33	1
Bromomethane	ND		0.50	0.22	ug/L			01/10/23 22:33	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			01/10/23 22:33	1
Chlorobenzene	ND		0.50	0.19	ug/L			01/10/23 22:33	1
Dibromochloromethane	ND		0.50	0.15	ug/L			01/10/23 22:33	1
Chloroethane	ND		1.0	0.29	ug/L			01/10/23 22:33	1
Chloroform	ND		0.50	0.19	ug/L			01/10/23 22:33	1
Chloromethane	ND		0.50	0.30	ug/L			01/10/23 22:33	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			01/10/23 22:33	1
Bromodichloromethane	ND		0.50	0.19	ug/L			01/10/23 22:33	1
Ethylbenzene	ND		0.50	0.25	ug/L			01/10/23 22:33	1
Methylene Chloride	ND		2.0	0.57	ug/L			01/10/23 22:33	1
m,p-Xylene	ND		1.0	0.17	ug/L			01/10/23 22:33	1
Naphthalene	ND		1.0	0.33	ug/L			01/10/23 22:33	1
o-Xylene	ND		0.50	0.15	ug/L			01/10/23 22:33	1
Tetrachloroethene	ND		0.50	0.21	ug/L			01/10/23 22:33	1
Toluene	ND		0.50	0.23	ug/L			01/10/23 22:33	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			01/10/23 22:33	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			01/10/23 22:33	1
Trichloroethene	ND		0.50	0.17	ug/L			01/10/23 22:33	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			01/10/23 22:33	1
Vinyl chloride	ND		0.50	0.47	ug/L			01/10/23 22:33	1
Xylenes, Total	ND		1.0	0.17	ug/L			01/10/23 22:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*		*01/10/23 22:33*	*1*
Toluene-d8 (Surr)	*100*		*60 - 140*		*01/10/23 22:33*	*1*
Dibromofluoromethane (Surr)	*93*		*60 - 140*		*01/10/23 22:33*	*1*

Client Sample ID: TB-20230110
Lab Sample ID: 570-123417-3
Date Collected: 01/10/23 08:00
Matrix: Water
Date Received: 01/10/23 17:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			01/10/23 21:03	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			01/10/23 21:03	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			01/10/23 21:03	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TB-20230110 **Lab Sample ID: 570-123417-3**
Date Collected: 01/10/23 08:00 **Matrix: Water**
Date Received: 01/10/23 17:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	ND		0.50	0.39	ug/L			01/10/23 21:03	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/10/23 21:03	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			01/10/23 21:03	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/10/23 21:03	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			01/10/23 21:03	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			01/10/23 21:03	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			01/10/23 21:03	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			01/10/23 21:03	1
Acrolein	ND		5.0	4.6	ug/L			01/10/23 21:03	1
Acrylonitrile	ND		2.0	1.4	ug/L			01/10/23 21:03	1
Benzene	ND		0.50	0.28	ug/L			01/10/23 21:03	1
Bromoform	ND		1.0	0.25	ug/L			01/10/23 21:03	1
Bromomethane	ND		0.50	0.22	ug/L			01/10/23 21:03	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			01/10/23 21:03	1
Chlorobenzene	ND		0.50	0.19	ug/L			01/10/23 21:03	1
Dibromochloromethane	ND		0.50	0.15	ug/L			01/10/23 21:03	1
Chloroethane	ND		1.0	0.29	ug/L			01/10/23 21:03	1
Chloroform	ND		0.50	0.19	ug/L			01/10/23 21:03	1
Chloromethane	ND		0.50	0.30	ug/L			01/10/23 21:03	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			01/10/23 21:03	1
Bromodichloromethane	ND		0.50	0.19	ug/L			01/10/23 21:03	1
Ethylbenzene	ND		0.50	0.25	ug/L			01/10/23 21:03	1
Methylene Chloride	ND		2.0	0.57	ug/L			01/10/23 21:03	1
m,p-Xylene	ND		1.0	0.17	ug/L			01/10/23 21:03	1
Naphthalene	ND		1.0	0.33	ug/L			01/10/23 21:03	1
o-Xylene	ND		0.50	0.15	ug/L			01/10/23 21:03	1
Tetrachloroethene	ND		0.50	0.21	ug/L			01/10/23 21:03	1
Toluene	ND		0.50	0.23	ug/L			01/10/23 21:03	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			01/10/23 21:03	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			01/10/23 21:03	1
Trichloroethene	ND		0.50	0.17	ug/L			01/10/23 21:03	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			01/10/23 21:03	1
Vinyl chloride	ND		0.50	0.47	ug/L			01/10/23 21:03	1
Xylenes, Total	ND		1.0	0.17	ug/L			01/10/23 21:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*60 - 140*		*01/10/23 21:03*	*1*
Toluene-d8 (Surr)	*99*		*60 - 140*		*01/10/23 21:03*	*1*
Dibromofluoromethane (Surr)	*93*		*60 - 140*		*01/10/23 21:03*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-123417-1
Project/Site: Boeing SSFL NPDES - Outfall 010 - GRAB

General Chemistry

Client Sample ID: Outfall010_20230110_Grab
Lab Sample ID: 570-123417-1
Date Collected: 01/10/23 08:00
Matrix: Water
Date Received: 01/10/23 17:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM: Oil and Grease (1664A)	ND		0.95	0.49	mg/L		01/16/23 09:25	01/17/23 13:51	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123417-1
Project/Site: Boeing SSFL NPDES - Outfall 010 - GRAB

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)
570-123417-1	Outfall010_20230110_Grab	98	100	93
570-123417-3	TB-20230110	95	99	93
LCS 570-294921/1003	Lab Control Sample	99	102	101
LCSD 570-294921/4	Lab Control Sample Dup	98	100	102
MB 570-294921/6	Method Blank	99	98	100

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

Client: Haley & Aldrich, Inc.
Job ID: 570-123417-1
Project/Site: Boeing SSFL NPDES - Outfall 010 - GRAB

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-294921/6
Matrix: Water
Analysis Batch: 294921

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			01/10/23 20:10	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			01/10/23 20:10	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			01/10/23 20:10	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			01/10/23 20:10	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/10/23 20:10	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			01/10/23 20:10	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/10/23 20:10	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			01/10/23 20:10	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			01/10/23 20:10	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			01/10/23 20:10	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			01/10/23 20:10	1
Acrolein	ND		5.0	4.6	ug/L			01/10/23 20:10	1
Acrylonitrile	ND		2.0	1.4	ug/L			01/10/23 20:10	1
Benzene	ND		0.50	0.28	ug/L			01/10/23 20:10	1
Bromoform	ND		1.0	0.25	ug/L			01/10/23 20:10	1
Bromomethane	ND		0.50	0.22	ug/L			01/10/23 20:10	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			01/10/23 20:10	1
Chlorobenzene	ND		0.50	0.19	ug/L			01/10/23 20:10	1
Dibromochloromethane	ND		0.50	0.15	ug/L			01/10/23 20:10	1
Chloroethane	ND		1.0	0.29	ug/L			01/10/23 20:10	1
Chloroform	ND		0.50	0.19	ug/L			01/10/23 20:10	1
Chloromethane	ND		0.50	0.30	ug/L			01/10/23 20:10	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			01/10/23 20:10	1
Bromodichloromethane	ND		0.50	0.19	ug/L			01/10/23 20:10	1
Ethylbenzene	ND		0.50	0.25	ug/L			01/10/23 20:10	1
Methylene Chloride	ND		2.0	0.57	ug/L			01/10/23 20:10	1
m,p-Xylene	ND		1.0	0.17	ug/L			01/10/23 20:10	1
Naphthalene	ND		1.0	0.33	ug/L			01/10/23 20:10	1
o-Xylene	ND		0.50	0.15	ug/L			01/10/23 20:10	1
Tetrachloroethene	ND		0.50	0.21	ug/L			01/10/23 20:10	1
Toluene	ND		0.50	0.23	ug/L			01/10/23 20:10	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			01/10/23 20:10	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			01/10/23 20:10	1
Trichloroethene	ND		0.50	0.17	ug/L			01/10/23 20:10	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			01/10/23 20:10	1
Vinyl chloride	ND		0.50	0.47	ug/L			01/10/23 20:10	1
Xylenes, Total	ND		1.0	0.17	ug/L			01/10/23 20:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*60 - 140*		*01/10/23 20:10*	*1*
Toluene-d8 (Surr)	*98*		*60 - 140*		*01/10/23 20:10*	*1*
Dibromofluoromethane (Surr)	*100*		*60 - 140*		*01/10/23 20:10*	*1*

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-294921/1003
Matrix: Water
Analysis Batch: 294921

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	10.0	9.60		ug/L		96	70 - 130
1,1,2,2-Tetrachloroethane	10.0	9.20		ug/L		92	60 - 140
1,1,2-Trichloroethane	10.0	9.64		ug/L		96	70 - 130
1,1-Dichloroethane	10.0	9.97		ug/L		100	70 - 130
1,1-Dichloroethene	10.0	9.85		ug/L		98	50 - 150
1,2-Dichlorobenzene	10.0	9.20		ug/L		92	65 - 135
1,2-Dichloroethane	10.0	9.73		ug/L		97	70 - 130
1,2-Dichloropropane	10.0	9.78		ug/L		98	35 - 165
1,3-Dichlorobenzene	10.0	9.38		ug/L		94	70 - 130
1,4-Dichlorobenzene	10.0	9.12		ug/L		91	65 - 135
2-Chloroethyl vinyl ether	10.0	9.71		ug/L		97	1 - 225
Acrolein	20.0	19.7		ug/L		98	60 - 140
Acrylonitrile	100	104		ug/L		104	60 - 140
Benzene	10.0	9.65		ug/L		97	65 - 135
Bromoform	10.0	9.43		ug/L		94	70 - 130
Bromomethane	10.0	10.0		ug/L		100	15 - 185
Carbon tetrachloride	10.0	9.65		ug/L		97	70 - 130
Chlorobenzene	10.0	9.30		ug/L		93	65 - 135
Dibromochloromethane	10.0	9.45		ug/L		95	70 - 135
Chloroethane	10.0	10.0		ug/L		100	40 - 160
Chloroform	10.0	9.34		ug/L		93	70 - 135
Chloromethane	10.0	10.5		ug/L		105	1 - 205
cis-1,3-Dichloropropene	10.0	9.56		ug/L		96	25 - 175
Bromodichloromethane	10.0	9.72		ug/L		97	65 - 135
Ethylbenzene	10.0	9.58		ug/L		96	60 - 140
Methylene Chloride	10.0	8.91		ug/L		89	60 - 140
m,p-Xylene	10.0	9.33		ug/L		93	60 - 140
Naphthalene	10.0	9.95		ug/L		99	60 - 140
o-Xylene	10.0	9.52		ug/L		95	60 - 140
Tetrachloroethene	10.0	9.67		ug/L		97	70 - 130
Toluene	10.0	9.41		ug/L		94	70 - 130
trans-1,2-Dichloroethene	10.0	9.23		ug/L		92	70 - 130
trans-1,3-Dichloropropene	10.0	9.68		ug/L		97	50 - 150
Trichloroethene	10.0	9.43		ug/L		94	65 - 135
Trichlorofluoromethane	10.0	10.1		ug/L		101	50 - 150
Vinyl chloride	10.0	10.6		ug/L		106	5 - 195
Xylenes, Total	20.0	18.9		ug/L		94	60 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*60 - 140*
Toluene-d8 (Surr)	*102*		*60 - 140*
Dibromofluoromethane (Surr)	*101*		*60 - 140*

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-294921/4
Matrix: Water
Analysis Batch: 294921

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane			10.0	10.3		ug/L		103	70 - 130	8	36
1,1,2,2-Tetrachloroethane			10.0	9.60		ug/L		96	60 - 140	4	61
1,1,2-Trichloroethane			10.0	9.96		ug/L		100	70 - 130	3	45
1,1-Dichloroethane			10.0	10.3		ug/L		103	70 - 130	3	40
1,1-Dichloroethene			10.0	10.4		ug/L		104	50 - 150	6	32
1,2-Dichlorobenzene			10.0	9.89		ug/L		99	65 - 135	7	57
1,2-Dichloroethane			10.0	10.3		ug/L		103	70 - 130	6	49
1,2-Dichloropropane			10.0	9.51		ug/L		95	35 - 165	3	55
1,3-Dichlorobenzene			10.0	9.88		ug/L		99	70 - 130	5	43
1,4-Dichlorobenzene			10.0	9.25		ug/L		92	65 - 135	1	57
2-Chloroethyl vinyl ether			10.0	10.0		ug/L		100	1 - 225	3	71
Acrolein			20.0	20.0		ug/L		100	60 - 140	1	60
Acrylonitrile			100	105		ug/L		105	60 - 140	1	60
Benzene			10.0	9.96		ug/L		100	65 - 135	3	61
Bromoform			10.0	9.52		ug/L		95	70 - 130	1	42
Bromomethane			10.0	10.7		ug/L		107	15 - 185	6	61
Carbon tetrachloride			10.0	10.2		ug/L		102	70 - 130	5	41
Chlorobenzene			10.0	9.67		ug/L		97	65 - 135	4	53
Dibromochloromethane			10.0	9.61		ug/L		96	70 - 135	2	50
Chloroethane			10.0	10.9		ug/L		109	40 - 160	8	78
Chloroform			10.0	9.78		ug/L		98	70 - 135	5	30
Chloromethane			10.0	11.3		ug/L		113	1 - 205	8	60
cis-1,3-Dichloropropene			10.0	10.0		ug/L		100	25 - 175	5	58
Bromodichloromethane			10.0	10.2		ug/L		102	65 - 135	4	56
Ethylbenzene			10.0	9.92		ug/L		99	60 - 140	4	63
Methylene Chloride			10.0	9.39		ug/L		94	60 - 140	5	28
m,p-Xylene			10.0	9.60		ug/L		96	60 - 140	3	30
Naphthalene			10.0	10.3		ug/L		103	60 - 140	3	30
o-Xylene			10.0	9.94		ug/L		99	60 - 140	4	30
Tetrachloroethene			10.0	9.95		ug/L		100	70 - 130	3	39
Toluene			10.0	9.93		ug/L		99	70 - 130	5	41
trans-1,2-Dichloroethene			10.0	9.78		ug/L		98	70 - 130	6	45
trans-1,3-Dichloropropene			10.0	9.87		ug/L		99	50 - 150	2	86
Trichloroethene			10.0	10.1		ug/L		101	65 - 135	7	48
Trichlorofluoromethane			10.0	10.9		ug/L		109	50 - 150	8	84
Vinyl chloride			10.0	11.1		ug/L		111	5 - 195	5	66
Xylenes, Total			20.0	19.5		ug/L		98	60 - 140	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*
Toluene-d8 (Surr)	*100*		*60 - 140*
Dibromofluoromethane (Surr)	*102*		*60 - 140*

QC Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-123417-1
Project/Site: Boeing SSFL NPDES - Outfall 010 - GRAB

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-296047/1-A
Matrix: Water
Analysis Batch: 296473

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296047

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM: Oil and Grease	ND		1.0	0.51	mg/L		01/16/23 09:25	01/17/23 13:51	1

Lab Sample ID: LCS 570-296047/2-A
Matrix: Water
Analysis Batch: 296473

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296047

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
HEM: Oil and Grease			40.0	38.7		mg/L		97	78 - 114		

Lab Sample ID: LCSD 570-296047/3-A
Matrix: Water
Analysis Batch: 296473

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296047

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM: Oil and Grease			40.0	38.1		mg/L		95	78 - 114	2	18

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123417-1
Project/Site: Boeing SSFL NPDES - Outfall 010 - GRAB

GC/MS VOA

Analysis Batch: 294921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123417-1	Outfall010_20230110_Grab	Total/NA	Water	624.1	
570-123417-3	TB-20230110	Total/NA	Water	624.1	
MB 570-294921/6	Method Blank	Total/NA	Water	624.1	
LCS 570-294921/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-294921/4	Lab Control Sample Dup	Total/NA	Water	624.1	

General Chemistry

Prep Batch: 296047

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123417-1	Outfall010_20230110_Grab	Total/NA	Water	1664A	
MB 570-296047/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-296047/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-296047/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 296473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123417-1	Outfall010_20230110_Grab	Total/NA	Water	1664A	296047
MB 570-296047/1-A	Method Blank	Total/NA	Water	1664A	296047
LCS 570-296047/2-A	Lab Control Sample	Total/NA	Water	1664A	296047
LCSD 570-296047/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	296047

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-123417-1
Project/Site: Boeing SSFL NPDES - Outfall 010 - GRAB

Client Sample ID: Outfall010_20230110_Grab
Lab Sample ID: 570-123417-1
Date Collected: 01/10/23 08:00
Matrix: Water
Date Received: 01/10/23 17:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	294921	01/10/23 22:33	A1W	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Prep	1664A			1049 mL	1000 mL	296047	01/16/23 09:25	UWEZ	EET CAL 4
Total/NA	Analysis	1664A		1			296473	01/17/23 13:51	KH3Z	EET CAL 4
	Instrument ID: NO EQUIQ									

Client Sample ID: TB-20230110
Lab Sample ID: 570-123417-3
Date Collected: 01/10/23 08:00
Matrix: Water
Date Received: 01/10/23 17:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	294921	01/10/23 21:03	A1W	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 570-123417-1
Project/Site: Boeing SSFL NPDES - Outfall 010 - GRAB

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-12-22 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123417-1
Project/Site: Boeing SSFL NPDES - Outfall 010 - GRAB

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4

Protocol References:

1664A = EPA-821-98-002

EPA = US Environmental Protection Agency

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 010 - GRAB

Job ID: 570-123417-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123417-1	Outfall010_20230110_Grab	Water	01/10/23 08:00	01/10/23 17:55
570-123417-3	TB-20230110	Water	01/10/23 08:00	01/10/23 17:55

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203702.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-123417-2
Address: 931 W. Barkley Ave, ,	Due Date Requested: 1/23/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 010 GRAB	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall010_20230110_Grab (570-123417-1)	1/10/23	08:00 Pacific		Water			X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/10/23 1715	EC		1/10/23 1715	EA
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.9

Ver: 06/08/2021

1/23/2023

ICOC No:
570-203702

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required - E. Coli - level 4 required)	E Coli (1x, 10x, 100x Dilutions) - 8 hour hold time - level 4

123417

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

TRAE F T9B

Client Name/Address:
Haley & Aldrich
5333 Mission Center Rd Suite 300
San Diego, CA 92108

Eurofins Calscience Irvine Contact: Christian Bondoc
17461 Derian Ave Suite #100
Irvine CA 92614
Tel 949-260-3218

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Sampler: Adrian Mobeka

Project:
Boeing-SSFL NPDES
Permit 2023
Annual Outfall [003-007 009, 010]
Outfall 010
Grab

Project Manager: Katherine Miller
520.289.8606, 520.904.6944 (cell)

Field Manager: Mark Dominick
978.234.5033, 818.599.0702 (cell)

Field Readings | Meter serial #

Field Readings: (Include units)
Time of Readings: 0800
pH 6.83 pH unit
Temp 54.1 °C/F

Field readings QC
Checked by: [signature]
Date/Time: 1-10 2023/0800

ANALYSIS REQUIRED: A = MST-Bacteriodales, Human (SAM348-357) Source Molecular in Miami Lakes, FL; A = E. coli (SM9221) Enthalpy Analytical Orange, CA; R = Oil & Grease (E1664A-HEM); A = VOCs PP + xylenes, Freon 11 (E624); A = VOCs only A+A+2CVE (E624)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	MST-Bacteriodales (A)	E. coli (A)	Oil & Grease (R)	VOCs PP + xylenes, Freon 11 (A)	VOCs only A+A+2CVE (A)	Comments
Outfall 010	Outfall010_20230110_Grab	1/10/2023 / 0800	~~WM~~ WQ	~~125 mL Sterile Poly~~	~~1~~	~~None~~	~~5~~	~~No~~	~~X~~					Deliver to lab ASAP 8 hr hold time
			WM	125 mL Sterile Poly	3	Na2S2O3	10	No		X				Deliver to lab ASAP 8 hr hold time, Need 1x, 10x, 100x dilutions
			WM	1 L Glass Amber	2	H2SO4	15	No			X			
			WM	40 mL VOA	3	HCl	40	No				X		
			WM	40 mL VOA	3	None	55	No					X	
	Outfall010_20230110_Grab_Extra	1/10/2023 / 0800	WM	1 L Glass Amber	2	H2SO4	15	No			H			Hold
			WM	40 mL VOA	3	HCl	40	No				H		Hold
			WM	40 mL VOA	3	None	55	No					H	Hold
Trip Blanks	TB-20230110	1/10/2023 / 0800	WQ	40 mL VOA	2	HCl	40	No				X		
			WQ	40 mL VOA	2	None	55	No					X	

Legend R = Routine, A = Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-10-2023 ~~1-23-2023~~ 1235		[signature]	1/10/23 1235 EC
[signature]	1/10/23 1755		[signature]	1/10/23 1755
			[signature]	

Turn-around time: (Check)
24 Hour ______ 72 Hour ______ 10 Day: X
48 Hour ______ 5 Day ______ Normal ______

Sample Integrity: (Check)
Intact: ______ On Ice: ______
Store samples for 6 months.
Data Requirements: (Check)
No Level IV ______ All Level IV: X

1.8/1.8 2.3/2.3 Sc11

570-123417 Chain of Custody

Rainy Season 2019-2020
Version 2

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123417-1

Login Number: 123417
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 1/21/2023 12:35:23 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 010 - GRAB

JOB NUMBER

570-123417-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization

Virendra R Patil

Generated
1/21/2023 12:35:23 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123417-2
Project/Site: Boeing SSFL NPDES - Outfall 010 - GRAB

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123417-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123417-2

Comments
No additional comments.

Receipt
The samples were received on 1/10/2023 5:55 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.3º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Quant-Tray - E. Coli - level 4 required - E. Coli - level 4 required: This method was subcontracted to Enthalpy Analytical - Barkley. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123417-2
Project/Site: Boeing SSFL NPDES - Outfall 010 - GRAB

Method	Method Description	Protocol	Laboratory
1103.1	E. Coli	EPA	Enthalpy

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Enthalpy = Enthalpy Analytical - Barkley, 931 W. Barkley Ave, Orange, CA 92868

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 010 - GRAB

Job ID: 570-123417-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123417-1	Outfall010_20230110_Grab	Water	01/10/23 08:00	01/10/23 17:55

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 477186
Report Level: IV
Report Date: 01/19/2023

Microbiology Tests

Analytical Report *prepared for:*

Virendra Patel
Eurofins Calscience Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Project: BOEING NPDES SSFL - Boeing SSFL NPDES - Outfall 010 GRAB #44024446

Authorized for release by:

Quynhgiao Le, Project Manager
714-7716900
quynhgiao.le@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

ENTHALPY ANALYTICAL

Sample Summary

Virendra Patel Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780	Lab Job #: Project No: Location: Date Received:	477186 BOEING NPDES SSFL Boeing SSFL NPDES - Outfall 010 GRAB #44024446 01/10/23

Sample ID	Lab ID	Collected	Matrix
OUTFALL010_20230110_GRAB (570-123417-1)	477186-001	01/10/23 08:00	Water

ENTHALPY ANALYTICAL

Case Narrative

MICROBIOLOGY TESTS (SM 9223BB)

Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Virendra Patel	Lab Job Number:	477186
	Project No:	BOEING NPDES SSFL
	Location:	Boeing SSFL NPDES - Outfall 010 GRAB #44024446
	Date Received:	01/10/23

This data package contains sample and QC results for one water sample, requested for the above referenced project on 01/10/23. See attached cooler receipt form for any sample receipt problems or discrepancies.

Chain of Custody

477196

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins
Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203702.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-123417-2
Address: 931 W. Barkley Ave, ,	Due Date Requested: 1/23/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 010 GRAB	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall010_20230110_Grab (570-123417-1)	1/10/23	08:00 Pacific		Water			X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/10/23 1715	EC		1/10/23 1715	EA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.9

Ver: 06/08/2021

1/21/2023

477186

ICOC No:
570-203702

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required - E. Coli - level 4 required)	E Coli (1x, 10x, 100x Dilutions) - 8 hour hold time - level 4

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: Eurofins Calscience

Project: Boeing SSFL NPDES - Outfall 002

Date Received: 01/10/2023

Sampler's Name Present: ☐ Yes ☑ No

Section 2

Sample(s) received in a cooler? ☑ Yes, How many? 1 ☐ No (skip section 2)

Sample Temp (°C) (No Cooler): _____

Sample Temp (°C), One from each cooler: #1: 4.9 #2: _____ #3: _____ #4: _____

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperoture as long as there is evidence that cooling has begun.)

Shipping Information: _____

Section 3

Was the cooler packed with: ☑ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other _____

Cooler Temp (°C): #1: - _____ #2: _____ #3: _____ #4: _____

Section 4	YES	NO	N/A
Was a COC received?	✔		
Are sample IDs present?	✔		
Are sampling dates & times present?	✔		
Is a relinquished signature present?	✔		
Are the tests required clearly indicated on the COC?	✔		
Are custody seals present?		✔	
If custody seals are present, were they intact?			✔
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)	✔		
Did all samples arrive intact? If no, indicate in Section 4 below.	✔		
Did all bottle labels agree with COC? (ID, dates and times)	✔		
Were the samples collected in the correct containers for the required tests?	✔		
Are the containers labeled with the correct preservatives?	✔		
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✔
Was a sufficient amount of sample submitted for the requested tests?	✔		

Section 5 Explanations/Comments

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: _____ Date/Time _____ ☐ Email (email sent to/on): _____ / _____

Project Manager's response:

Completed By: _____ Date: 1/10/23

Results & QC Summary

ENTHALPY ANALYTICAL

Total Coliform / E. coli by Quanti-Tray

Lab #: 477186 **Project#:** BOEING NPDES SSFL

Client: Eurofins Calscience Tustin **Location:** Boeing SSFL NPDES - Outfall 010 GR...

Field ID:	OUTFALL010_20230110_GRAB (570-123417-1)	**Batch#:**	305102	**Analyzed:**	01/11/23 15:45
Lab ID:	477186-001	**Sampled:**	01/10/23 08:00	**Prep:**	
Matrix:	Water	**Received:**	01/10/23	**Analysis:**	SM 9223Bb
DiIn Fac:	1.000	**Prepared:**	01/10/23 17:40	**Analyst:**	SMT

477186-001 Analyte	Result	RL	Units	Qual
Coliform, E. Coli	**77**	1.0	MPN/100ml	H

Legend

H: Holding time was exceeded

RL: Reporting Limit

SM 9223 B-b, Quanti-Tray

Prep Analyst: JA Prep Date/Time: 1/10/23 1740 QC Batch ID: 305102 Batch Page 1 of 1

Read Analyst: 81 Read Date/Time 01/11/23 1545

Media Used (check one): ☐Colisure ☒Colilert 18 ☐Colilert 24 Media Lot #: E0396 Pipette Lot #: A104116, A103842

Monthly Quanti-tray Sealer Check: Did it Pass? ☒Yes ☐No Date of last check*: 01/03/23 * Quanti-Tray Sealer Check must be performed monthly Bottle lot # BU009V comparator lot # H14E

Total and E. coli: Incubator ID: M4 Incubator In, Temp/Time: 1801 35.2 Incubator Out, Temp/Time: 1545 35.2

Fecal Coliform: Water Bath ID: NA Water Bath In, Temp/Time: NA Water Bath Out, Temp/Time: NA

Client	Client Sample ID	Enthalpy Sample ID	Dilution Factor	Total Coliform Counts		MPN Table Value	Final Result, MPN	E. coli Counts		MPN Table Value	Final Result, MPN	Fecal Coliform Counts (Colilert 18 only)		MPN Table Value	Final Result, MPN	Comments
				Large Wells	Small Wells			Large Wells	Small Wells			Large Wells	Small Wells			
		477186-001	1X	49	48	>2419.6	>2400	39	3	76.7	770					Ea-01 1X
		↓ 001	10X	48	20	272.3	2700	10	1	12.1	120					↓ 10X
		↓ 001	100X	23	6	38.3	3800	1	0	1.0	100					↓ 100X
Quality Control		**Culture ID**														
Positive +/+ (E. Coli)		1/08/23		49	48	>2419.6	>2400	49	48	>2419.6	>2400					
Positive +/- (K. Pneumonia)		↓		49	48	>2419.6	>2400	0	0	<1	<1					
Negative -/- (P. Aeruginosa)		↓		0	0	<1	<1	0	0	<1	<1					

JA 1/12/23

Data Entered By: JA 1/12/23 Data Reviewed By:

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203702.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-123417-2
Address: 931 W. Barkley Ave, ,	Due Date Requested: 1/23/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 010 GRAB	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall010_20230110_Grab (570-123417-1)	1/10/23	08:00 Pacific		Water			X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/10/23 1715	EC		1/10/23 1715	EA
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.9

Ver: 06/08/2021

1/21/2023

ICOC No:
570-203702

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required - E. Coli - level 4 required)	E Coli (1x, 10x, 100x Dilutions) - 8 hour hold time - level 4

123417

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

TRACE-T913

Client Name/Address:	Project:	ANALYSIS REQUIRED	Field Readings	Meter serial #
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Annual Outfall [003-007 009, 010] Outfall 010 Grab	A A R A A	Field Readings: (Include units) Time of Readings: 0800	
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218			pH 6.83 pH unit Temp 54.1 °C/F	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)		Field readings QC Checked by:	
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)		Date/Time: 1-10 2023/0800	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	MST-Bacteriodales, Human (SAM348-357) Source Molecular in Miami Lakes, FL	E. coli (SM9221) Enthalpy Analytical Orange, CA	Oil & Grease (E1664A-HEM)	VOCs PP + xylenes, Freon 11 (E624)	VOCs only A+A+2CVE (E624)	Comments
Outfall 010	Outfall010_20230110_Grab	1/10/2023 0800	~~WM~~	~~125 mL Sterile Poly~~	~~1~~	None	5	No	X					Deliver to lab ASAP 8 hr hold time
			WM	125 mL Sterile Poly	3	Na2S2O3	10	No		X				Deliver to lab ASAP 8 hr hold time, Need 1x, 10x, 100x dilutions
			WM	1 L Glass Amber	2	H2SO4	15	No			X			
			WM	40 mL VOA	3	HCl	40	No				X		
			WM	40 mL VOA	3	None	55	No					X	
	Outfall010_20230110_Grab_Extra	1/10/2023 0800	WM	1 L Glass Amber	2	H2SO4	15	No			H			Hold
			WM	40 mL VOA	3	HCl	40	No				H		Hold
			WM	40 mL VOA	3	None	55	No					H	Hold
Trip Blanks	TB-20230110	1/10/2023 0800	WQ	40 mL VOA	2	HCl	40	No				X		
			WQ	40 mL VOA	2	None	55	No					X	

Legend R = Routine, A = Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-10-2023 1235		[signature]	1/10/23 1235 EC
[signature]	1/10/23 1755		[signature]	1/10/23 1755

Turn-around time: (Check)
24 Hour ____ 72 Hour ____ 10 Day ___X___
48 Hour ____ 5 Day ____ Normal ____

Sample Integrity: (Check)
Intact: ____ On Ice: ____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: ____ All Level IV: ___X___

1.8/1.8 2.3/2.3 SCII

570-123417 Chain of Custody

Page 20 of 21

1/21/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123417-2

Login Number: 123417
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/24/2023 2:34:37 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 010 - GRAB

JOB NUMBER

570-123417-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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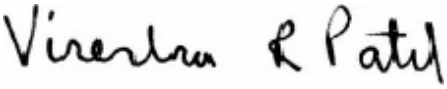
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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2/24/2023 2:34:37 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123417-3
Project/Site: Boeing SSFL NPDES - Outfall 010 - GRAB

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123417-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123417-3

Comments
No additional comments.

Receipt
The samples were received on 1/10/2023 5:55 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.3º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Weck 624.1 - 2-CEVE only (ug/L units) with MDLs (J): This method was subcontracted to Weck Laboratories, Inc.. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123417-3
Project/Site: Boeing SSFL NPDES - Outfall 010 - GRAB

Method	Method Description	Protocol	Laboratory
624	EPA 624 Purgeable Organic Compounds	EPA	Weck Lab

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Weck Lab = Weck Laboratories, Inc., 14859 East Clark Avenue, City of Industry, CA 917451396

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123417-3
Project/Site: Boeing SSFL NPDES - Outfall 010 - GRAB

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123417-2	Outfall010_20230110_Grab_Extra	Water	01/10/23 08:00	01/10/23 17:55

WECK LABORATORIES, INC.

Certificate of Analysis

FINAL REPORT

Work Orders:	3B02099	**Report Date:**	2/21/2023
		Received Date:	2/2/2023
Project:	570-123417-3	**Turnaround Time:**	Normal
		Phones:	(949) 261-1022
		Fax:	(949) 260-3297
		P.O. #:	
Attn:	Virendra Patel	**Billing Code:**	
Client:	Eurofins Calscience - Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780		

Dear Virendra Patel,

Enclosed are the results of analyses for samples received 2/02/23 with the Chain-of-Custody document. The samples were received in good condition, at 1.9 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: Outfall010_20230110_Grab_Extra (570-123417-2) Sampled: 01/10/23 8:00 by Client

3B02099-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 624.1			**Instr:** GCMS21				
Batch ID: W3B0481 **Preparation:** EPA 5030B			**Prepared:** 02/07/23 06:54				**Analyst:** ADM
2-Chloroethyl vinyl ether	ND	0.19	1.0	ug/l	1	02/07/23	O-09
Surrogate(s)							
1,2-Dichloroethane-d4	*114%*		*82-125*	*Conc: 57.1*		*02/07/23*	
4-Bromofluorobenzene	*96%*		*88-108*	*Conc: 48.0*		*02/07/23*	
Toluene-d8	*97%*		*92-112*	*Conc: 48.4*		*02/07/23*	

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634

www.wecklabs.com

Quality Control Results

Volatile Organic Compounds by P&T and GC/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3B0481-BLK1)					**Prepared & Analyzed: 02/07/23**						
2-Chloroethyl vinyl ether	ND	0.19	1.0	ug/l							
Surrogate(s)											
1,2-Dichloroethane-d4	*51.1*			*ug/l*	*50.0*		*102*	*82-125*			
4-Bromofluorobenzene	*49.0*			*ug/l*	*50.0*		*98*	*88-108*			
Toluene-d8	*48.5*			*ug/l*	*50.0*		*97*	*92-112*			
LCS (W3B0481-BS1)					**Prepared & Analyzed: 02/07/23**						
2-Chloroethyl vinyl ether	55.4	0.19	1.0	ug/l	50.0		111	0.1-305			
Surrogate(s)											
1,2-Dichloroethane-d4	*50.1*			*ug/l*	*50.0*		*100*	*82-125*			
4-Bromofluorobenzene	*48.2*			*ug/l*	*50.0*		*96*	*88-108*			
Toluene-d8	*52.1*			*ug/l*	*50.0*		*104*	*92-112*			
LCS Dup (W3B0481-BSD1)					**Prepared & Analyzed: 02/07/23**						
2-Chloroethyl vinyl ether	54.8	0.19	1.0	ug/l	50.0		110	0.1-305	1	25	
Surrogate(s)											
1,2-Dichloroethane-d4	*50.3*			*ug/l*	*50.0*		*101*	*82-125*			
4-Bromofluorobenzene	*52.4*			*ug/l*	*50.0*		*105*	*88-108*			
Toluene-d8	*49.2*			*ug/l*	*50.0*		*98*	*92-112*			

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

Notes and Definitions

Item	Definition
O-09	This sample was received with the EPA recommended holding time expired.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Reviewed by:

Tiffany T. Felix For Rahul R. Nair
Project Manager

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

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Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

3PO

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California	
Address: 14859 East Clark Avenue, ,	Due Date Requested: 2/22/2023	Analysis Requested	
City: City of Industry	TAT Requested (days):		
State, Zip: CA, 917451396			
Phone:	PO #:		
Email:	WO #:		
Project Name: Boeing SSFL NPDES - Outfall 010 - GRAB	Project #: 44024446		
Site:	SSOW#:		

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck 624.1 - 2-CEVE only (ug/L units) with MDLs (J))
			Preservation Code:		X	X	
Outfall010_20230110_Grab_Extra (570-123417-2)	1/10/23	08:00 Pacific		Water			X

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under cha maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accred attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are r***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time:	Company	Received by: Date/Time:

3B0

ICOC No:
570-206007

Containers

Count	Container Type	Preservative
3	Voa Vial 40ml - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
2	SUBCONTRACT	SUB (Weck 624.1 - 2-CEVE only (ug/L units) with MDLs (J))	Level IV, EQUIS 5C, MDL reporting w/J flag. Pe

COC	COC matches sample labels?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Receipt Information	Sample Temperature	1.9°C			
	Samples received on ice?	☒	☐		
	Ice Type (Blue/Wet)	WET			
	All samples intact?	☒	☐		
	Samples in proper containers?	☒	☐		
	Sufficient sample volume?	☒	☐		
	Samples intact?	☒	☐		
	Received within holding time?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Sample Preservation Verification?	Sample labels checked for correct preservation?	☒	☐	☐	
	VOC Headspace: (No) none, If Yes (See comment) 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☒	☐	☐ <6m
	pH verified upon receipt? Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 525.2<2; 6710B<2; 608.3 5-9	☐	☐	☒	pH paper Lot# 2
	Free Chlorine Tested <0.1	☐	☐	☒	Cl Test Strip Lot
	O&G pH <2 verified?	☐	☐	☐	pH paper Lot#
	pH adjusted for O&G	☐	☐	☐	pH Reading: / Acid Lot# / Amt added:
	Project Manager notified?	☐	☐	☒	

08

PM Comments

Sample Receipt Checklist Prepared by:

Signature: *Lester Abad* Date: 02/02/23

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203702.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-123417-2
Address: 931 W. Barkley Ave, ,	Due Date Requested: 1/23/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 010 GRAB	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall010_20230110_Grab (570-123417-1)	1/10/23	08:00 Pacific		Water			X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/10/23 1715	EC	[signature]	1/10/23 1715	EA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.9

Ver: 06/08/2021

ICOC No:
570-203702

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required - E. Coli - level 4 required)	E Coli (1x, 10x, 100x Dilutions) - 8 hour hold time - level 4

123417

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

TRAEF T911

Client Name/Address:	Project:
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Annual Outfall [003-007 009, 010] Outfall 010 Grab
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

Field Readings | Meter serial #

Field Readings: (Include units)
Time of Readings: 0800
pH 6.83 pH unit
Temp 54.1 °C/F

Field readings QC
Checked by: M. Dominick
Date/Time: 1-10 2023/0800

ANALYSIS REQUIRED (A = MST; A = E. coli; R = Oil & Grease; A = VOCs PP; A = VOCs only)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	MST-Bacteriodales, Human (SAM348-357) Source Molecular in Miami Lakes, FL (A)	E. coli (SM9221) Enthalpy Analytical Orange, CA (A)	Oil & Grease (E1664A-HEM) (R)	VOCs PP + xylenes, Freon 11 (E624) (A)	VOCs only A+A+2CVE (E624) (A)					Comments
Outfall 010	Outfall010_20230110_Grab	1/10/2023 0800	~~WM~~ WM	~~125 mL Sterile Poly~~	~~1~~	~~None~~	~~5~~	~~No~~	~~X~~									Deliver to lab ASAP 8 hr hold time
			WM	125 mL Sterile Poly	3	Na2S2O3	10	No		X								Deliver to lab ASAP 8 hr hold time, Need 1x, 10x, 100x dilutions
			WM	1 L Glass Amber	2	H2SO4	15	No			X							
			WM	40 mL VOA	3	HCl	40	No				X						
			WM	40 mL VOA	3	None	55	No					X					
	Outfall010_20230110_Grab_Extra	1/10/2023 0800	WM	1 L Glass Amber	2	H2SO4	15	No			H							Hold
			WM	40 mL VOA	3	HCl	40	No				H						Hold
			WM	40 mL VOA	3	None	55	No					H					Hold
Trip Blanks	TB-20230110	1/10/2023 0800	WQ	40 mL VOA	2	HCl	40	No				X						
			WQ	40 mL VOA	2	None	55	No					X					

Legend R = Routine, A = Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
M. Dominick	1-10-2023 ~~1-23-2023~~ 1235	H&A	[signature]	1/10/23 1235 EC
[signature]	1/10/23 1755		[signature]	1/10/23 1755

Turn-around time: (Check)
24 Hour ______ 72 Hour ______ 10 Day: X
48 Hour ______ 5 Day ______ Normal ______

Sample Integrity: (Check)
Intact: ______ On Ice: ______
Store samples for 6 months.
Data Requirements: (Check)
No Level IV ______ All Level IV: X

1.8/1.8 2.3/2.3 Sc11

570-123417 Chain of Custody

Rainy Season 2019-2020
Version 2

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123417-3

Login Number: 123417
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/4/2023 4:07:29 PM Revision 1

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 010 COMP

JOB NUMBER

570-123653-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Eurofins Calscience

Job Notes

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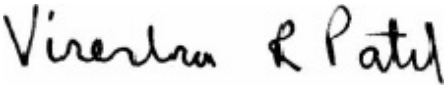
Authorization



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Revision 1

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123653-1
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LQ	LCS/LCSD recovery above method control limits

GC Semi VOA

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

HPLC/IC

Qualifier	Qualifier Description
EY	Result exceeds normal dynamic range; reported as a min. est.
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)

Metals

Qualifier	Qualifier Description
BB	Sample > 4X spike concentration
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123653-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123653-1

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 2/7/2023. The report (revision 1) is being revised due to: Revised to Include Chromium Tota/Dissolved as part of the metals list..

Receipt
The samples were received on 1/11/2023 7:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.3º C.

GC/MS Semi VOA
Method 625.1 SIM: The continuing calibration verification (CCV) associated with batch 570-299094 recovered above the upper control limit for 4,6-Dinitro-2-methylphenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: Outfall010_20230111_Comp (570-123653-1).

Method 625.1 SIM: The continuing calibration verification (CCV) associated with batch 570-299094 recovered above the upper control limit for 4,6-Dinitro-2-methylphenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: Outfall010_20230111_Comp (570-123653-1).

Method 625.1 SIM: The method blank for preparation batch 570-296476 and analytical batch 570-299094 contained Benzo[b]fluoranthene above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and re-analysis of samples was not performed.

Method 625.1 SIM: The laboratory control sample (LCS) for preparation batch 570-299585 and analytical batch 570-299894 recovered outside acceptance limits for Hexachloroethane, Nitrobenzene, 1,2,4-Trichlorobenzene and Benzidine. There was insufficient sample to perform a re-extraction or re-analysis; therefore, the data have been reported.

Method 625.1 SIM: The laboratory control sample (LCSD) for preparation batch 570-299585 and analytical batch 570-299894 recovered outside acceptance limits for Hexachloroethane, Nitrobenzene, 2-Chloronaphthalene and 1,2,4-Trichlorobenzene. There was insufficient sample to perform a re-extraction or re-analysis; therefore, the data have been reported.

Method 625.1 SIM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 570-299585 and analytical batch 570-299894 recovered outside control limits for the following analytes: Benzidine.

Method 625.1 SIM: The following sample was re-prepared outside of preparation holding time: Outfall010_20230111_Comp (570-123653-1).

Method 625.1 SIM: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 570-296476 and analytical batch 570-298807 recovered outside control limits for the following analytes: 2,4-Dinitrophenol, 4,6-Dinitro-2-methylphenol and Hexachlorocyclopentadiene. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
Method 218.6: The following sample to be analyzed for hexavalent chromium was filtered and buffered with ammonium sulfate solution per EPA Method 218.6 within 24 hours of collection. This extends the holding time to 28 days per the 2017 Clean Water Act Methods Update Rule, which supersedes preservation and holding time requirements in the analytical method.

Job ID: 570-123653-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

Outfall010_20230111_Comp (570-123653-1)

Method 314.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 570-296367 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Perchlorate in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

Method 314.0: Due to the high concentration of Perchlorate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 570-296367 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 200.7 Rev 4.4: The matrix spike / matrix spike duplicate (MS/MSD) recoveries of Aluminum and Iron for preparation batch 570-295991 and analytical batch 570-296174 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: Outfall010_20230111_Comp_F (570-123653-2). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: Outfall010_20230111_Comp_F (570-123653-2), (570-123653-C-2 MS) and (570-123653-C-2 MSD). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: Outfall010_20230111_Comp_F (570-123653-2), (570-123653-C-2 MS) and (570-123653-C-2 MSD). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-296435. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.
Method 608

Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-296476.The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.
Method:625.1 Sim

Method 625: The emulsions were broken up using sodium sulfate
Method:625 Sim

Job ID: 570-123653-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-299585. >. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Method 625.1 S.I.M.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Job ID: 570-123653-1

Client Sample ID: Outfall010_20230111_Comp — Lab Sample ID: 570-123653-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium, hexavalent	0.094	J,DX	0.20	0.019	ug/L	1		218.6	Total/NA
Chloride	3.5		1.0	0.36	mg/L	1		300.0	Total/NA
Fluoride	0.085	J,DX	0.10	0.046	mg/L	1		300.0	Total/NA
Sulfate	2.9		1.0	0.24	mg/L	1		300.0	Total/NA
Nitrate Nitrite as N	1.2		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Boron	71	J,DX	500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Antimony	0.41	J,DX	2.0	0.36	ug/L	1		200.8	Total Recoverable
Copper	2.8		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	1.1		1.0	0.12	ug/L	1		200.8	Total Recoverable
Arsenic	1.5		1.0	0.16	ug/L	1		200.8	Total Recoverable
Iron	260		20	3.7	ug/L	1		200.8	Total Recoverable
Nickel	1.5	J,DX	2.0	0.17	ug/L	1		200.8	Total Recoverable
Vanadium	1.8	J,DX	2.0	0.17	ug/L	1		200.8	Total Recoverable
Aluminum	290		15	8.6	ug/L	1		200.8	Total Recoverable
Zinc	8.7	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Chromium	0.64	J,DX	2.0	0.14	ug/L	1		200.8	Total Recoverable
Hardness as calcium carbonate	53		7.1	0.50	mg/L	1		SM 2340B	Total Recoverable
Total Dissolved Solids	140		10	8.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	8.3		1.0	0.83	mg/L	1		SM 2540D	Total/NA

Client Sample ID: Outfall010_20230111_Comp_F — Lab Sample ID: 570-123653-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	68	J,DX BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Antimony	0.46	J,DX BU	2.0	0.36	ug/L	1		200.8	Dissolved
Copper	2.4	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.27	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Arsenic	1.5	BU	1.0	0.16	ug/L	1		200.8	Dissolved
Iron	130	BU	20	3.7	ug/L	1		200.8	Dissolved
Nickel	1.1	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Vanadium	1.3	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Aluminum	210	BU	15	8.6	ug/L	1		200.8	Dissolved
Zinc	4.2	J,DX BU	20	2.8	ug/L	1		200.8	Dissolved
Chromium	0.39	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Hardness as calcium carbonate	52		7.1	0.50	mg/L	1		SM 2340B	Dissolved

This Detection Summary does not include radiochemical test results.

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: Outfall010_20230111_Comp
Lab Sample ID: 570-123653-1
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		0.19	0.12	ug/L		01/17/23 13:55	01/27/23 12:06	1
1,2-Dichlorobenzene	ND		0.19	0.11	ug/L		01/17/23 13:55	01/27/23 12:06	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.19	0.088	ug/L		01/17/23 13:55	01/27/23 12:06	1
1,3-Dichlorobenzene	ND		0.19	0.11	ug/L		01/17/23 13:55	01/27/23 12:06	1
1,4-Dichlorobenzene	ND		0.19	0.13	ug/L		01/17/23 13:55	01/27/23 12:06	1
2,4,6-Trichlorophenol	ND		0.97	0.13	ug/L		01/17/23 13:55	01/27/23 12:06	1
2,4-Dichlorophenol	ND		0.97	0.13	ug/L		01/17/23 13:55	01/27/23 12:06	1
2,4-Dimethylphenol	ND		0.19	0.12	ug/L		01/17/23 13:55	01/27/23 12:06	1
2,4-Dinitrophenol	ND	LQ	4.8	4.1	ug/L		01/17/23 13:55	01/27/23 12:06	1
2,4-Dinitrotoluene	ND		0.19	0.11	ug/L		01/17/23 13:55	01/27/23 12:06	1
2,6-Dinitrotoluene	ND		0.19	0.17	ug/L		01/17/23 13:55	01/27/23 12:06	1
2-Chloronaphthalene	ND		0.19	0.14	ug/L		01/17/23 13:55	01/27/23 12:06	1
2-Chlorophenol	ND		0.19	0.092	ug/L		01/17/23 13:55	01/27/23 12:06	1
2-Nitrophenol	ND		4.8	3.4	ug/L		01/17/23 13:55	01/27/23 12:06	1
3,3'-Dichlorobenzidine	ND		4.8	2.9	ug/L		01/17/23 13:55	01/27/23 12:06	1
4,6-Dinitro-2-methylphenol	ND	LQ	4.8	4.4	ug/L		01/17/23 13:55	01/27/23 12:06	1
4-Bromophenyl phenyl ether	ND		0.19	0.096	ug/L		01/17/23 13:55	01/27/23 12:06	1
4-Chloro-3-methylphenol	ND		0.97	0.13	ug/L		01/17/23 13:55	01/27/23 12:06	1
4-Chlorophenyl phenyl ether	ND		0.19	0.16	ug/L		01/17/23 13:55	01/27/23 12:06	1
4-Nitrophenol	ND		4.8	3.3	ug/L		01/17/23 13:55	01/27/23 12:06	1
Acenaphthene	ND		0.19	0.095	ug/L		01/17/23 13:55	01/27/23 12:06	1
Acenaphthylene	ND		0.19	0.13	ug/L		01/17/23 13:55	01/27/23 12:06	1
Anthracene	ND		0.19	0.081	ug/L		01/17/23 13:55	01/27/23 12:06	1
Benzidine	ND		4.8	2.6	ug/L		01/17/23 13:55	01/27/23 12:06	1
Benzo[a]anthracene	ND		0.19	0.12	ug/L		01/17/23 13:55	01/27/23 12:06	1
Benzo[a]pyrene	ND		0.19	0.15	ug/L		01/17/23 13:55	01/27/23 12:06	1
Benzo[b]fluoranthene	ND		0.19	0.11	ug/L		01/17/23 13:55	01/27/23 12:06	1
Benzo[g,h,i]perylene	ND		0.19	0.10	ug/L		01/17/23 13:55	01/27/23 12:06	1
Benzo[k]fluoranthene	ND		0.19	0.11	ug/L		01/17/23 13:55	01/27/23 12:06	1
bis (2-chloroisopropyl) ether	ND		0.19	0.13	ug/L		01/17/23 13:55	01/27/23 12:06	1
Bis(2-chloroethoxy)methane	ND		0.19	0.10	ug/L		01/17/23 13:55	01/27/23 12:06	1
Bis(2-chloroethyl)ether	ND		0.19	0.10	ug/L		01/17/23 13:55	01/27/23 12:06	1
Bis(2-ethylhexyl) phthalate	ND		4.8	3.5	ug/L		01/17/23 13:55	01/27/23 12:06	1
Butyl benzyl phthalate	ND		0.97	0.65	ug/L		01/17/23 13:55	01/27/23 12:06	1
Chrysene	ND		0.19	0.11	ug/L		01/17/23 13:55	01/27/23 12:06	1
Dibenz(a,h)anthracene	ND		0.19	0.15	ug/L		01/17/23 13:55	01/27/23 12:06	1
Diethyl phthalate	ND		1.9	0.17	ug/L		01/17/23 13:55	01/27/23 12:06	1
Dimethyl phthalate	ND		1.9	0.094	ug/L		01/17/23 13:55	01/27/23 12:06	1
Di-n-octyl phthalate	ND		2.9	0.52	ug/L		01/17/23 13:55	01/27/23 12:06	1
Fluoranthene	ND		0.19	0.097	ug/L		01/17/23 13:55	01/27/23 12:06	1
Fluorene	ND		0.19	0.091	ug/L		01/17/23 13:55	01/27/23 12:06	1
Hexachlorobenzene	ND		0.19	0.13	ug/L		01/17/23 13:55	01/27/23 12:06	1
Hexachlorobutadiene	ND		0.19	0.15	ug/L		01/17/23 13:55	01/27/23 12:06	1
Hexachlorocyclopentadiene	ND	LQ	0.19	0.15	ug/L		01/17/23 13:55	01/27/23 12:06	1
Hexachloroethane	ND		0.19	0.12	ug/L		01/17/23 13:55	01/27/23 12:06	1
Indeno[1,2,3-cd]pyrene	ND		0.19	0.12	ug/L		01/17/23 13:55	01/27/23 12:06	1
Isophorone	ND		0.19	0.095	ug/L		01/17/23 13:55	01/27/23 12:06	1
Naphthalene	ND		0.19	0.11	ug/L		01/17/23 13:55	01/27/23 12:06	1
Nitrobenzene	ND		0.19	0.14	ug/L		01/17/23 13:55	01/27/23 12:06	1

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Client Sample ID: Outfall010_20230111_Comp **Lab Sample ID: 570-123653-1**
Date Collected: 01/11/23 09:45 **Matrix: Water**
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodimethylamine	ND		0.19	0.18	ug/L		01/17/23 13:55	01/27/23 12:06	1
N-Nitrosodi-n-propylamine	ND		0.19	0.14	ug/L		01/17/23 13:55	01/27/23 12:06	1
N-Nitrosodiphenylamine	ND		0.19	0.10	ug/L		01/17/23 13:55	01/27/23 12:06	1
Pentachlorophenol	ND		0.97	0.82	ug/L		01/17/23 13:55	01/27/23 12:06	1
Phenanthrene	ND		0.19	0.16	ug/L		01/17/23 13:55	01/27/23 12:06	1
Phenol	ND		0.97	0.51	ug/L		01/17/23 13:55	01/27/23 12:06	1
Pyrene	ND		0.19	0.083	ug/L		01/17/23 13:55	01/27/23 12:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*69*		*28 - 127*	*01/17/23 13:55*	*01/27/23 12:06*	*1*
2-Fluorobiphenyl (Surr)	*49*		*31 - 120*	*01/17/23 13:55*	*01/27/23 12:06*	*1*
2-Fluorophenol	*34*		*17 - 120*	*01/17/23 13:55*	*01/27/23 12:06*	*1*
Nitrobenzene-d5	*51*		*27 - 120*	*01/17/23 13:55*	*01/27/23 12:06*	*1*
Phenol-d6 (Surr)	*24*		*10 - 120*	*01/17/23 13:55*	*01/27/23 12:06*	*1*
p-Terphenyl-d14 (Surr)	*85*		*45 - 120*	*01/17/23 13:55*	*01/27/23 12:06*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-1
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) - RE

Client Sample ID: Outfall010_20230111_Comp
Lab Sample ID: 570-123653-1
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	ND	BU	1.9	1.8	ug/L		01/30/23 13:57	01/31/23 16:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*71*		*28 - 127*	*01/30/23 13:57*	*01/31/23 16:11*	*1*
2-Fluorobiphenyl (Surr)	*50*		*31 - 120*	*01/30/23 13:57*	*01/31/23 16:11*	*1*
2-Fluorophenol	*39*		*17 - 120*	*01/30/23 13:57*	*01/31/23 16:11*	*1*
Nitrobenzene-d5	*55*		*27 - 120*	*01/30/23 13:57*	*01/31/23 16:11*	*1*
Phenol-d6 (Surr)	*27*		*10 - 120*	*01/30/23 13:57*	*01/31/23 16:11*	*1*
p-Terphenyl-d14 (Surr)	*66*		*45 - 120*	*01/30/23 13:57*	*01/31/23 16:11*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-1
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: EPA 608.3 - Organochlorine Pesticides in Water

Client Sample ID: Outfall010_20230111_Comp
Lab Sample ID: 570-123653-1
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0033	0.0031	ug/L		01/17/23 12:18	01/19/23 13:36	1
alpha-BHC	ND		0.0013	0.0012	ug/L		01/17/23 12:18	01/19/23 13:36	1
beta-BHC	ND		0.0050	0.0039	ug/L		01/17/23 12:18	01/19/23 13:36	1
delta-BHC	ND		0.0033	0.0020	ug/L		01/17/23 12:18	01/19/23 13:36	1
gamma-BHC (Lindane)	ND		0.0013	0.00066	ug/L		01/17/23 12:18	01/19/23 13:36	1
Chlordane (technical)	ND		0.033	0.026	ug/L		01/17/23 12:18	01/19/23 13:36	1
4,4'-DDD	ND		0.0067	0.0044	ug/L		01/17/23 12:18	01/19/23 13:36	1
4,4'-DDE	ND		0.0033	0.0019	ug/L		01/17/23 12:18	01/19/23 13:36	1
4,4'-DDT	ND		0.0033	0.0016	ug/L		01/17/23 12:18	01/19/23 13:36	1
Dieldrin	ND		0.0033	0.0013	ug/L		01/17/23 12:18	01/19/23 13:36	1
Endosulfan I	ND		0.0013	0.0013	ug/L		01/17/23 12:18	01/19/23 13:36	1
Endosulfan II	ND		0.0067	0.0041	ug/L		01/17/23 12:18	01/19/23 13:36	1
Endosulfan sulfate	ND		0.0033	0.0014	ug/L		01/17/23 12:18	01/19/23 13:36	1
Endrin	ND		0.0033	0.0023	ug/L		01/17/23 12:18	01/19/23 13:36	1
Endrin aldehyde	ND		0.033	0.024	ug/L		01/17/23 12:18	01/19/23 13:36	1
Heptachlor	ND		0.0013	0.0012	ug/L		01/17/23 12:18	01/19/23 13:36	1
Heptachlor epoxide	ND		0.0067	0.0039	ug/L		01/17/23 12:18	01/19/23 13:36	1
Toxaphene	ND		0.067	0.054	ug/L		01/17/23 12:18	01/19/23 13:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*67*		*20 - 139*	*01/17/23 12:18*	*01/19/23 13:36*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-1
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: EPA 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Client Sample ID: Outfall010_20230111_Comp
Lab Sample ID: 570-123653-1
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.10	0.044	ug/L		01/17/23 12:18	01/20/23 15:23	1
Aroclor 1221	ND		0.10	0.044	ug/L		01/17/23 12:18	01/20/23 15:23	1
Aroclor 1232	ND		0.10	0.044	ug/L		01/17/23 12:18	01/20/23 15:23	1
Aroclor 1242	ND		0.10	0.044	ug/L		01/17/23 12:18	01/20/23 15:23	1
Aroclor 1248	ND		0.10	0.044	ug/L		01/17/23 12:18	01/20/23 15:23	1
Aroclor 1254	ND		0.10	0.052	ug/L		01/17/23 12:18	01/20/23 15:23	1
Aroclor 1260	ND		0.10	0.052	ug/L		01/17/23 12:18	01/20/23 15:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*71*		*20 - 154*	*01/17/23 12:18*	*01/20/23 15:23*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-1
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography)

Client Sample ID: Outfall010_20230111_Comp
Lab Sample ID: 570-123653-1
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.094	J,DX	0.20	0.019	ug/L			01/13/23 07:23	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-1
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: Outfall010_20230111_Comp
Lab Sample ID: 570-123653-1
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.5		1.0	0.36	mg/L			01/12/23 08:17	1
Fluoride	0.085	J,DX	0.10	0.046	mg/L			01/12/23 08:17	1
Sulfate	2.9		1.0	0.24	mg/L			01/12/23 08:17	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-1
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: Outfall010_20230111_Comp
Lab Sample ID: 570-123653-1
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/17/23 17:49	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-1
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: Outfall010_20230111_Comp
Lab Sample ID: 570-123653-1
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	1.2		0.10	0.020	mg/L			01/17/23 15:00	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-1
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: Outfall010_20230111_Comp
Lab Sample ID: 570-123653-1
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	71	J,DX	500	3.5	ug/L		01/16/23 07:05	01/16/23 12:38	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-1
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: Outfall010_20230111_Comp_F
Lab Sample ID: 570-123653-2
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	68	J,DX BU	500	3.5	ug/L			01/20/23 19:23	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-1
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: Outfall010_20230111_Comp
Lab Sample ID: 570-123653-1
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.41**	**J,DX**	2.0	0.36	ug/L		01/16/23 07:29	01/16/23 12:11	1
Cadmium	ND		1.0	0.13	ug/L		01/16/23 07:29	01/16/23 12:11	1
Copper	**2.8**		2.0	0.32	ug/L		01/16/23 07:29	01/16/23 12:11	1
Lead	**1.1**		1.0	0.12	ug/L		01/16/23 07:29	01/16/23 12:11	1
Selenium	ND		2.0	0.52	ug/L		01/16/23 07:29	01/16/23 12:11	1
Silver	ND		1.0	0.23	ug/L		01/16/23 07:29	01/16/23 12:11	1
Thallium	ND		1.0	0.11	ug/L		01/16/23 07:29	01/16/23 12:11	1
Beryllium	ND		0.50	0.26	ug/L		01/16/23 07:29	01/16/23 12:11	1
Arsenic	**1.5**		1.0	0.16	ug/L		01/16/23 07:29	01/16/23 12:11	1
Iron	**260**		20	3.7	ug/L		01/16/23 07:29	01/16/23 12:11	1
Nickel	**1.5**	**J,DX**	2.0	0.17	ug/L		01/16/23 07:29	01/16/23 12:11	1
Vanadium	**1.8**	**J,DX**	2.0	0.17	ug/L		01/16/23 07:29	01/16/23 12:11	1
Aluminum	**290**		15	8.6	ug/L		01/16/23 07:29	01/16/23 12:11	1
Zinc	**8.7**	**J,DX**	20	2.8	ug/L		01/16/23 07:29	01/16/23 12:11	1
Chromium	**0.64**	**J,DX**	2.0	0.14	ug/L		01/16/23 07:29	01/16/23 12:11	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-1
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: Outfall010_20230111_Comp_F
Lab Sample ID: 570-123653-2
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.46**	**J,DX BU**	2.0	0.36	ug/L			01/18/23 10:12	1
Cadmium	ND	BU	1.0	0.13	ug/L			01/18/23 10:12	1
Copper	**2.4**	**BU**	2.0	0.32	ug/L			01/18/23 10:12	1
Lead	**0.27**	**J,DX BU**	1.0	0.12	ug/L			01/18/23 10:12	1
Selenium	ND	BU	2.0	0.52	ug/L			01/18/23 10:12	1
Silver	ND	BU	1.0	0.23	ug/L			01/18/23 10:12	1
Thallium	ND	BU	1.0	0.11	ug/L			01/18/23 10:12	1
Beryllium	ND	BU	0.50	0.26	ug/L			01/18/23 10:12	1
Arsenic	**1.5**	**BU**	1.0	0.16	ug/L			01/18/23 10:12	1
Iron	**130**	**BU**	20	3.7	ug/L			01/18/23 10:12	1
Nickel	**1.1**	**J,DX BU**	2.0	0.17	ug/L			01/18/23 10:12	1
Vanadium	**1.3**	**J,DX BU**	2.0	0.17	ug/L			01/18/23 10:12	1
Aluminum	**210**	**BU**	15	8.6	ug/L			01/18/23 10:12	1
Zinc	**4.2**	**J,DX BU**	20	2.8	ug/L			01/18/23 10:12	1
Chromium	**0.39**	**J,DX BU**	2.0	0.14	ug/L			01/18/23 10:12	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-1
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: Outfall010_20230111_Comp
Lab Sample ID: 570-123653-1
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		01/13/23 16:10	01/16/23 19:33	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-1
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: Outfall010_20230111_Comp_F
Lab Sample ID: 570-123653-2
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	BU	0.20	0.12	ug/L		01/13/23 18:30	01/16/23 20:17	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-1
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Client Sample ID: Outfall010_20230111_Comp
Lab Sample ID: 570-123653-1
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	53		7.1	0.50	mg/L			01/18/23 16:34	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-1
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Client Sample ID: Outfall010_20230111_Comp_F
Lab Sample ID: 570-123653-2
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	52		7.1	0.50	mg/L			01/24/23 16:34	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-1
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

General Chemistry

Client Sample ID: Outfall010_20230111_Comp
Lab Sample ID: 570-123653-1
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			01/17/23 17:49	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			01/13/23 16:45	1
Total Dissolved Solids (SM 2540C)	**140**		10	8.7	mg/L			01/17/23 13:25	1
Total Suspended Solids (SM 2540D)	**8.3**		1.0	0.83	mg/L			01/16/23 19:56	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Job ID: 570-123653-1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TBP (28-127)	FBP (31-120)	2FP (17-120)	NBZ (27-120)	PHL6 (10-120)	TPHd14 (45-120)		
570-123653-1	Outfall010_20230111_Comp	69	49	34	51	24	85		
570-123653-1 - RE	Outfall010_20230111_Comp	71	50	39	55	27	66		
LCS 570-296476/2-A	Lab Control Sample	109	81	63	81	44	105		
LCS 570-299585/2-A	Lab Control Sample	80	61	42	53	29	75		
LCSD 570-296476/3-A	Lab Control Sample Dup	106	80	63	80	45	106		
LCSD 570-299585/3-A	Lab Control Sample Dup	83	59	37	48	26	78		
MB 570-296476/1-A	Method Blank	69	55	40	64	26	76		
MB 570-299585/1-A	Method Blank	71	59	44	68	30	73		

Surrogate Legend

TBP = 2,4,6-Tribromophenol
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCX2 (20-139)							
570-123653-1	Outfall010_20230111_Comp	67							

Surrogate Legend

TCX = Tetrachloro-m-xylene

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCX1 (20-139)							
LCS 570-296435/2-A	Lab Control Sample	85							
LCSD 570-296435/3-A	Lab Control Sample Dup	85							
MB 570-296435/1-A	Method Blank	90							

Surrogate Legend

TCX = Tetrachloro-m-xylene

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	DCB1 (20-154)							
570-123653-1	Outfall010_20230111_Comp	71							
LCS 570-296435/4-A	Lab Control Sample	91							
LCSD 570-296435/5-A	Lab Control Sample Dup	102							
MB 570-296435/1-A	Method Blank	98							

Surrogate Legend

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-1
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

DCB = DCB Decachlorobiphenyl (Surr)

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Job ID: 570-123653-1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-296476/1-A
Matrix: Water
Analysis Batch: 299094

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296476

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		0.20	0.13	ug/L		01/17/23 13:55	01/27/23 11:45	1
1,2-Dichlorobenzene	ND		0.20	0.11	ug/L		01/17/23 13:55	01/27/23 11:45	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.20	0.091	ug/L		01/17/23 13:55	01/27/23 11:45	1
1,3-Dichlorobenzene	ND		0.20	0.12	ug/L		01/17/23 13:55	01/27/23 11:45	1
1,4-Dichlorobenzene	ND		0.20	0.14	ug/L		01/17/23 13:55	01/27/23 11:45	1
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		01/17/23 13:55	01/27/23 11:45	1
2,4-Dichlorophenol	ND		1.0	0.14	ug/L		01/17/23 13:55	01/27/23 11:45	1
2,4-Dimethylphenol	ND		0.20	0.13	ug/L		01/17/23 13:55	01/27/23 11:45	1
2,4-Dinitrophenol	ND		5.0	4.3	ug/L		01/17/23 13:55	01/27/23 11:45	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		01/17/23 13:55	01/27/23 11:45	1
2,6-Dinitrotoluene	ND		0.20	0.18	ug/L		01/17/23 13:55	01/27/23 11:45	1
2-Chloronaphthalene	ND		0.20	0.14	ug/L		01/17/23 13:55	01/27/23 11:45	1
2-Chlorophenol	ND		0.20	0.096	ug/L		01/17/23 13:55	01/27/23 11:45	1
2-Nitrophenol	ND		5.0	3.5	ug/L		01/17/23 13:55	01/27/23 11:45	1
3,3'-Dichlorobenzidine	ND		5.0	3.0	ug/L		01/17/23 13:55	01/27/23 11:45	1
4,6-Dinitro-2-methylphenol	ND		5.0	4.5	ug/L		01/17/23 13:55	01/27/23 11:45	1
4-Bromophenyl phenyl ether	ND		0.20	0.10	ug/L		01/17/23 13:55	01/27/23 11:45	1
4-Chloro-3-methylphenol	ND		1.0	0.13	ug/L		01/17/23 13:55	01/27/23 11:45	1
4-Chlorophenyl phenyl ether	ND		0.20	0.17	ug/L		01/17/23 13:55	01/27/23 11:45	1
4-Nitrophenol	ND		5.0	3.4	ug/L		01/17/23 13:55	01/27/23 11:45	1
Acenaphthene	ND		0.20	0.098	ug/L		01/17/23 13:55	01/27/23 11:45	1
Acenaphthylene	ND		0.20	0.13	ug/L		01/17/23 13:55	01/27/23 11:45	1
Anthracene	ND		0.20	0.084	ug/L		01/17/23 13:55	01/27/23 11:45	1
Benzidine	ND		5.0	2.7	ug/L		01/17/23 13:55	01/27/23 11:45	1
Benzo[a]anthracene	ND		0.20	0.12	ug/L		01/17/23 13:55	01/27/23 11:45	1
Benzo[a]pyrene	ND		0.20	0.15	ug/L		01/17/23 13:55	01/27/23 11:45	1
Benzo[b]fluoranthene	0.127	J,DX	0.20	0.11	ug/L		01/17/23 13:55	01/27/23 11:45	1
Benzo[g,h,i]perylene	ND		0.20	0.11	ug/L		01/17/23 13:55	01/27/23 11:45	1
Benzo[k]fluoranthene	ND		0.20	0.11	ug/L		01/17/23 13:55	01/27/23 11:45	1
bis (2-chloroisopropyl) ether	ND		0.20	0.13	ug/L		01/17/23 13:55	01/27/23 11:45	1
Bis(2-chloroethoxy)methane	ND		0.20	0.11	ug/L		01/17/23 13:55	01/27/23 11:45	1
Bis(2-chloroethyl)ether	ND		0.20	0.10	ug/L		01/17/23 13:55	01/27/23 11:45	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		01/17/23 13:55	01/27/23 11:45	1
Butyl benzyl phthalate	ND		1.0	0.67	ug/L		01/17/23 13:55	01/27/23 11:45	1
Chrysene	ND		0.20	0.11	ug/L		01/17/23 13:55	01/27/23 11:45	1
Dibenz(a,h)anthracene	ND		0.20	0.16	ug/L		01/17/23 13:55	01/27/23 11:45	1
Diethyl phthalate	ND		2.0	0.18	ug/L		01/17/23 13:55	01/27/23 11:45	1
Dimethyl phthalate	ND		2.0	0.098	ug/L		01/17/23 13:55	01/27/23 11:45	1
Di-n-octyl phthalate	ND		3.0	0.54	ug/L		01/17/23 13:55	01/27/23 11:45	1
Fluoranthene	ND		0.20	0.10	ug/L		01/17/23 13:55	01/27/23 11:45	1
Fluorene	ND		0.20	0.095	ug/L		01/17/23 13:55	01/27/23 11:45	1
Hexachlorobenzene	ND		0.20	0.13	ug/L		01/17/23 13:55	01/27/23 11:45	1
Hexachlorobutadiene	ND		0.20	0.15	ug/L		01/17/23 13:55	01/27/23 11:45	1
Hexachlorocyclopentadiene	ND		0.20	0.15	ug/L		01/17/23 13:55	01/27/23 11:45	1
Hexachloroethane	ND		0.20	0.13	ug/L		01/17/23 13:55	01/27/23 11:45	1
Indeno[1,2,3-cd]pyrene	ND		0.20	0.13	ug/L		01/17/23 13:55	01/27/23 11:45	1
Isophorone	ND		0.20	0.099	ug/L		01/17/23 13:55	01/27/23 11:45	1
Naphthalene	ND		0.20	0.11	ug/L		01/17/23 13:55	01/27/23 11:45	1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: MB 570-296476/1-A
Matrix: Water
Analysis Batch: 299094

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296476

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrobenzene	ND		0.20	0.14	ug/L		01/17/23 13:55	01/27/23 11:45	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		01/17/23 13:55	01/27/23 11:45	1
N-Nitrosodi-n-propylamine	ND		0.20	0.14	ug/L		01/17/23 13:55	01/27/23 11:45	1
N-Nitrosodiphenylamine	ND		0.20	0.11	ug/L		01/17/23 13:55	01/27/23 11:45	1
Pentachlorophenol	ND		1.0	0.84	ug/L		01/17/23 13:55	01/27/23 11:45	1
Phenanthrene	ND		0.20	0.16	ug/L		01/17/23 13:55	01/27/23 11:45	1
Phenol	ND		1.0	0.52	ug/L		01/17/23 13:55	01/27/23 11:45	1
Pyrene	ND		0.20	0.086	ug/L		01/17/23 13:55	01/27/23 11:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*69*		*28 - 127*	*01/17/23 13:55*	*01/27/23 11:45*	*1*
2-Fluorobiphenyl (Surr)	*55*		*31 - 120*	*01/17/23 13:55*	*01/27/23 11:45*	*1*
2-Fluorophenol	*40*		*17 - 120*	*01/17/23 13:55*	*01/27/23 11:45*	*1*
Nitrobenzene-d5	*64*		*27 - 120*	*01/17/23 13:55*	*01/27/23 11:45*	*1*
Phenol-d6 (Surr)	*26*		*10 - 120*	*01/17/23 13:55*	*01/27/23 11:45*	*1*
p-Terphenyl-d14 (Surr)	*76*		*45 - 120*	*01/17/23 13:55*	*01/27/23 11:45*	*1*

Lab Sample ID: LCS 570-296476/2-A
Matrix: Water
Analysis Batch: 298807

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296476

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4-Trichlorobenzene	20.0	15.7		ug/L		78	57 - 130
1,2-Dichlorobenzene	20.0	18.1		ug/L		90	40 - 120
1,2-Diphenylhydrazine(as Azobenzene)	20.0	18.0		ug/L		90	60 - 115
1,3-Dichlorobenzene	20.0	18.3		ug/L		91	37 - 120
1,4-Dichlorobenzene	20.0	17.9		ug/L		89	39 - 120
2,4,6-Trichlorophenol	20.0	21.6		ug/L		108	52 - 129
2,4-Dichlorophenol	20.0	19.2		ug/L		96	53 - 122
2,4-Dimethylphenol	20.0	16.8		ug/L		84	42 - 120
2,4-Dinitrophenol	20.0	35.3	LQ	ug/L		176	1 - 173
2,4-Dinitrotoluene	20.0	24.7		ug/L		124	48 - 127
2,6-Dinitrotoluene	20.0	23.6		ug/L		118	68 - 137
2-Chloronaphthalene	20.0	19.0		ug/L		95	65 - 120
2-Chlorophenol	20.0	19.9		ug/L		99	36 - 120
2-Nitrophenol	20.0	21.9		ug/L		110	45 - 167
3,3'-Dichlorobenzidine	20.0	19.9		ug/L		99	8 - 213
4,6-Dinitro-2-methylphenol	20.0	33.5	LQ	ug/L		168	53 - 130
4-Bromophenyl phenyl ether	20.0	20.0		ug/L		100	65 - 120
4-Chloro-3-methylphenol	20.0	20.5		ug/L		102	41 - 128
4-Chlorophenyl phenyl ether	20.0	18.5		ug/L		93	38 - 145
4-Nitrophenol	20.0	11.9		ug/L		59	13 - 129
Benzidine	20.0	6.27		ug/L		31	20 - 164
bis (2-chloroisopropyl) ether	20.0	22.1		ug/L		110	63 - 139
Bis(2-chloroethoxy)methane	20.0	17.7		ug/L		89	49 - 165
Bis(2-chloroethyl)ether	20.0	21.0		ug/L		105	43 - 126
Bis(2-ethylhexyl) phthalate	20.0	25.9		ug/L		130	29 - 137
Butyl benzyl phthalate	20.0	25.9		ug/L		130	1 - 140

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-296476/2-A
Matrix: Water
Analysis Batch: 298807

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296476

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Diethyl phthalate	20.0	20.7		ug/L		103	1 - 120
Dimethyl phthalate	20.0	20.5		ug/L		103	1 - 120
Di-n-octyl phthalate	20.0	26.3		ug/L		131	19 - 132
Hexachlorobenzene	20.0	21.1		ug/L		106	8 - 142
Hexachlorobutadiene	20.0	15.3		ug/L		76	38 - 120
Hexachlorocyclopentadiene	20.0	29.4	LQ	ug/L		147	43 - 145
Hexachloroethane	20.0	17.7		ug/L		88	55 - 120
Isophorone	20.0	18.2		ug/L		91	47 - 180
Nitrobenzene	20.0	16.3		ug/L		81	54 - 158
N-Nitrosodimethylamine	20.0	12.3		ug/L		61	20 - 120
N-Nitrosodi-n-propylamine	20.0	19.5		ug/L		97	14 - 198
N-Nitrosodiphenylamine	20.0	21.4		ug/L		107	65 - 133
Pentachlorophenol	20.0	23.5		ug/L		118	38 - 152
Phenol	20.0	9.55		ug/L		48	17 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol	*109*		*28 - 127*
2-Fluorobiphenyl (Surr)	*81*		*31 - 120*
2-Fluorophenol	*63*		*17 - 120*
Nitrobenzene-d5	*81*		*27 - 120*
Phenol-d6 (Surr)	*44*		*10 - 120*
p-Terphenyl-d14 (Surr)	*105*		*45 - 120*

Lab Sample ID: LCSD 570-296476/3-A
Matrix: Water
Analysis Batch: 298807

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296476

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene	20.0	15.6		ug/L		78	57 - 130	0	30
1,2-Dichlorobenzene	20.0	18.1		ug/L		91	40 - 120	0	20
1,2-Diphenylhydrazine(as Azobenzene)	20.0	17.0		ug/L		85	60 - 115	5	30
1,3-Dichlorobenzene	20.0	17.6		ug/L		88	37 - 120	4	20
1,4-Dichlorobenzene	20.0	17.4		ug/L		87	39 - 120	3	20
2,4,6-Trichlorophenol	20.0	21.2		ug/L		106	52 - 129	2	35
2,4-Dichlorophenol	20.0	19.3		ug/L		96	53 - 122	1	30
2,4-Dimethylphenol	20.0	17.1		ug/L		85	42 - 120	1	35
2,4-Dinitrophenol	20.0	37.5	LQ	ug/L		187	1 - 173	6	79
2,4-Dinitrotoluene	20.0	24.5		ug/L		122	48 - 127	1	25
2,6-Dinitrotoluene	20.0	23.7		ug/L		119	68 - 137	0	29
2-Chloronaphthalene	20.0	19.1		ug/L		95	65 - 120	0	15
2-Chlorophenol	20.0	19.7		ug/L		98	36 - 120	1	37
2-Nitrophenol	20.0	21.9		ug/L		110	45 - 167	0	33
3,3'-Dichlorobenzidine	20.0	19.8		ug/L		99	8 - 213	0	65
4,6-Dinitro-2-methylphenol	20.0	33.9	LQ	ug/L		170	53 - 130	1	122
4-Bromophenyl phenyl ether	20.0	19.0		ug/L		95	65 - 120	5	26
4-Chloro-3-methylphenol	20.0	21.1		ug/L		105	41 - 128	3	44
4-Chlorophenyl phenyl ether	20.0	19.6		ug/L		98	38 - 145	5	36
4-Nitrophenol	20.0	12.5		ug/L		62	13 - 129	5	79

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-296476/3-A
Matrix: Water
Analysis Batch: 298807

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296476

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzidine			20.0	6.18		ug/L		31	20 - 164	1	30
bis (2-chloroisopropyl) ether			20.0	21.7		ug/L		109	63 - 139	2	46
Bis(2-chloroethoxy)methane			20.0	18.1		ug/L		91	49 - 165	2	32
Bis(2-chloroethyl)ether			20.0	20.9		ug/L		105	43 - 126	0	65
Bis(2-ethylhexyl) phthalate			20.0	25.2		ug/L		126	29 - 137	3	50
Butyl benzyl phthalate			20.0	25.2		ug/L		126	1 - 140	3	36
Diethyl phthalate			20.0	20.9		ug/L		105	1 - 120	1	60
Dimethyl phthalate			20.0	20.7		ug/L		104	1 - 120	1	110
Di-n-octyl phthalate			20.0	26.3		ug/L		131	19 - 132	0	42
Hexachlorobenzene			20.0	19.8		ug/L		99	8 - 142	6	33
Hexachlorobutadiene			20.0	15.5		ug/L		78	38 - 120	1	38
Hexachlorocyclopentadiene			20.0	29.1		ug/L		145	43 - 145	1	22
Hexachloroethane			20.0	17.6		ug/L		88	55 - 120	0	32
Isophorone			20.0	18.2		ug/L		91	47 - 180	0	56
Nitrobenzene			20.0	16.6		ug/L		83	54 - 158	2	37
N-Nitrosodimethylamine			20.0	12.4		ug/L		62	20 - 120	1	21
N-Nitrosodi-n-propylamine			20.0	19.2		ug/L		96	14 - 198	1	52
N-Nitrosodiphenylamine			20.0	20.8		ug/L		104	65 - 133	3	20
Pentachlorophenol			20.0	23.3		ug/L		116	38 - 152	1	52
Phenol			20.0	9.83		ug/L		49	17 - 120	3	39

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol	*106*		*28 - 127*
2-Fluorobiphenyl (Surr)	*80*		*31 - 120*
2-Fluorophenol	*63*		*17 - 120*
Nitrobenzene-d5	*80*		*27 - 120*
Phenol-d6 (Surr)	*45*		*10 - 120*
p-Terphenyl-d14 (Surr)	*106*		*45 - 120*

Lab Sample ID: MB 570-299585/1-A
Matrix: Water
Analysis Batch: 299894

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 299585

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	ND		2.0	1.8	ug/L		01/30/23 11:57	01/31/23 15:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*71*		*28 - 127*	*01/30/23 11:57*	*01/31/23 15:08*	*1*
2-Fluorobiphenyl (Surr)	*59*		*31 - 120*	*01/30/23 11:57*	*01/31/23 15:08*	*1*
2-Fluorophenol	*44*		*17 - 120*	*01/30/23 11:57*	*01/31/23 15:08*	*1*
Nitrobenzene-d5	*68*		*27 - 120*	*01/30/23 11:57*	*01/31/23 15:08*	*1*
Phenol-d6 (Surr)	*30*		*10 - 120*	*01/30/23 11:57*	*01/31/23 15:08*	*1*
p-Terphenyl-d14 (Surr)	*73*		*45 - 120*	*01/30/23 11:57*	*01/31/23 15:08*	*1*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-299585/2-A
Matrix: Water
Analysis Batch: 299894

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 299585

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Di-n-butyl phthalate			20.0	16.0		ug/L		80	8 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol	*80*		*28 - 127*
2-Fluorobiphenyl (Surr)	*61*		*31 - 120*
2-Fluorophenol	*42*		*17 - 120*
Nitrobenzene-d5	*53*		*27 - 120*
Phenol-d6 (Surr)	*29*		*10 - 120*
p-Terphenyl-d14 (Surr)	*75*		*45 - 120*

Lab Sample ID: LCSD 570-299585/3-A
Matrix: Water
Analysis Batch: 299894

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 299585

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Di-n-butyl phthalate			20.0	16.5		ug/L		82	8 - 120	3	28

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol	*83*		*28 - 127*
2-Fluorobiphenyl (Surr)	*59*		*31 - 120*
2-Fluorophenol	*37*		*17 - 120*
Nitrobenzene-d5	*48*		*27 - 120*
Phenol-d6 (Surr)	*26*		*10 - 120*
p-Terphenyl-d14 (Surr)	*78*		*45 - 120*

Method: 608.3 - Organochlorine Pesticides in Water

Lab Sample ID: MB 570-296435/1-A
Matrix: Water
Analysis Batch: 296586

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296435

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0033	0.0031	ug/L		01/17/23 12:18	01/18/23 20:08	1
alpha-BHC	ND		0.0013	0.0012	ug/L		01/17/23 12:18	01/18/23 20:08	1
beta-BHC	ND		0.0050	0.0039	ug/L		01/17/23 12:18	01/18/23 20:08	1
delta-BHC	ND		0.0033	0.0020	ug/L		01/17/23 12:18	01/18/23 20:08	1
gamma-BHC (Lindane)	ND		0.0013	0.00066	ug/L		01/17/23 12:18	01/18/23 20:08	1
Chlordane (technical)	ND		0.033	0.026	ug/L		01/17/23 12:18	01/18/23 20:08	1
4,4'-DDD	ND		0.0067	0.0044	ug/L		01/17/23 12:18	01/18/23 20:08	1
4,4'-DDE	ND		0.0033	0.0019	ug/L		01/17/23 12:18	01/18/23 20:08	1
4,4'-DDT	ND		0.0033	0.0016	ug/L		01/17/23 12:18	01/18/23 20:08	1
Dieldrin	ND		0.0033	0.0013	ug/L		01/17/23 12:18	01/18/23 20:08	1
Endosulfan I	ND		0.0013	0.0013	ug/L		01/17/23 12:18	01/18/23 20:08	1
Endosulfan II	ND		0.0067	0.0041	ug/L		01/17/23 12:18	01/18/23 20:08	1
Endosulfan sulfate	ND		0.0033	0.0014	ug/L		01/17/23 12:18	01/18/23 20:08	1
Endrin	ND		0.0033	0.0023	ug/L		01/17/23 12:18	01/18/23 20:08	1
Endrin aldehyde	ND		0.033	0.024	ug/L		01/17/23 12:18	01/18/23 20:08	1
Heptachlor	ND		0.0013	0.0012	ug/L		01/17/23 12:18	01/18/23 20:08	1

Method: 608.3 - Organochlorine Pesticides in Water (Continued)

Lab Sample ID: MB 570-296435/1-A
Matrix: Water
Analysis Batch: 296586

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296435

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor epoxide	ND		0.0067	0.0039	ug/L		01/17/23 12:18	01/18/23 20:08	1
Toxaphene	ND		0.067	0.054	ug/L		01/17/23 12:18	01/18/23 20:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*90*		*20 - 139*	*01/17/23 12:18*	*01/18/23 20:08*	*1*

Lab Sample ID: LCS 570-296435/2-A
Matrix: Water
Analysis Batch: 296586

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296435

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aldrin	0.0333	0.0272		ug/L		82	42 - 140
alpha-BHC	0.0333	0.0278		ug/L		83	37 - 140
beta-BHC	0.0333	0.0263		ug/L		79	17 - 147
delta-BHC	0.0333	0.0290		ug/L		87	19 - 140
gamma-BHC (Lindane)	0.0333	0.0276		ug/L		83	32 - 140
4,4'-DDD	0.0333	0.0296		ug/L		89	31 - 141
4,4'-DDE	0.0333	0.0295		ug/L		88	30 - 145
4,4'-DDT	0.0333	0.0293		ug/L		88	25 - 160
Dieldrin	0.0333	0.0269		ug/L		81	36 - 146
Endosulfan I	0.0333	0.0261		ug/L		78	45 - 153
Endosulfan II	0.0333	0.0275		ug/L		82	1 - 202
Endosulfan sulfate	0.0333	0.0272		ug/L		81	26 - 144
Endrin	0.0333	0.0306		ug/L		92	30 - 147
Endrin aldehyde	0.0333	0.0266	J,DX	ug/L		80	50 - 135
Heptachlor	0.0333	0.0288		ug/L		86	34 - 140
Heptachlor epoxide	0.0333	0.0277		ug/L		83	37 - 142

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*85*		*20 - 139*

Lab Sample ID: LCSD 570-296435/3-A
Matrix: Water
Analysis Batch: 296586

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296435

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aldrin	0.0333	0.0272		ug/L		81	42 - 140	0	35
alpha-BHC	0.0333	0.0280		ug/L		84	37 - 140	1	36
beta-BHC	0.0333	0.0265		ug/L		80	17 - 147	1	44
delta-BHC	0.0333	0.0291		ug/L		87	19 - 140	0	52
gamma-BHC (Lindane)	0.0333	0.0278		ug/L		83	32 - 140	1	39
4,4'-DDD	0.0333	0.0303		ug/L		91	31 - 141	2	39
4,4'-DDE	0.0333	0.0296		ug/L		89	30 - 145	0	35
4,4'-DDT	0.0333	0.0299		ug/L		90	25 - 160	2	42
Dieldrin	0.0333	0.0270		ug/L		81	36 - 146	0	49
Endosulfan I	0.0333	0.0260		ug/L		78	45 - 153	0	28
Endosulfan II	0.0333	0.0280		ug/L		84	1 - 202	2	53
Endosulfan sulfate	0.0333	0.0274		ug/L		82	26 - 144	1	38

Method: 608.3 - Organochlorine Pesticides in Water (Continued)

Lab Sample ID: LCSD 570-296435/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 296586
Prep Batch: 296435

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Endrin			0.0333	0.0310		ug/L		93	30 - 147	1	48
Endrin aldehyde			0.0333	0.0270	J,DX	ug/L		81	50 - 135	2	30
Heptachlor			0.0333	0.0288		ug/L		86	34 - 140	0	43
Heptachlor epoxide			0.0333	0.0277		ug/L		83	37 - 142	0	26

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*85*		*20 - 139*

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 570-296435/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 297324
Prep Batch: 296435

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.10	0.044	ug/L		01/17/23 12:18	01/20/23 13:20	1
Aroclor 1221	ND		0.10	0.044	ug/L		01/17/23 12:18	01/20/23 13:20	1
Aroclor 1232	ND		0.10	0.044	ug/L		01/17/23 12:18	01/20/23 13:20	1
Aroclor 1242	ND		0.10	0.044	ug/L		01/17/23 12:18	01/20/23 13:20	1
Aroclor 1248	ND		0.10	0.044	ug/L		01/17/23 12:18	01/20/23 13:20	1
Aroclor 1254	ND		0.10	0.052	ug/L		01/17/23 12:18	01/20/23 13:20	1
Aroclor 1260	ND		0.10	0.052	ug/L		01/17/23 12:18	01/20/23 13:20	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*98*		*20 - 154*	*01/17/23 12:18*	*01/20/23 13:20*	*1*

Lab Sample ID: LCS 570-296435/4-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 297324
Prep Batch: 296435

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Aroclor 1016			0.133	0.114		ug/L		86	50 - 140		
Aroclor 1260			0.133	0.153		ug/L		115	8 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*91*		*20 - 154*

Lab Sample ID: LCSD 570-296435/5-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 297324
Prep Batch: 296435

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aroclor 1016			0.133	0.132		ug/L		99	50 - 140	14	36
Aroclor 1260			0.133	0.147		ug/L		110	8 - 140	4	38

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*102*		*20 - 154*

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 570-295597/4
Matrix: Water
Analysis Batch: 295597

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		0.20	0.019	ug/L			01/13/23 02:48	1

Lab Sample ID: LCS 570-295597/5
Matrix: Water
Analysis Batch: 295597

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chromium, hexavalent	50.1	51.3		ug/L		102	95 - 107

Lab Sample ID: LCSD 570-295597/6
Matrix: Water
Analysis Batch: 295597

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chromium, hexavalent	50.1	51.5		ug/L		103	95 - 107	0	20

Lab Sample ID: 570-123922-D-2 MS
Matrix: Water
Analysis Batch: 295597

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chromium, hexavalent	1.4		50.1	55.2		ug/L		107	85 - 121

Lab Sample ID: 570-123922-D-2 MSD
Matrix: Water
Analysis Batch: 295597

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chromium, hexavalent	1.4		50.1	55.2		ug/L		107	85 - 121	0	25

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-295297/5
Matrix: Water
Analysis Batch: 295297

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			01/12/23 06:53	1
Fluoride	ND		0.10	0.046	mg/L			01/12/23 06:53	1
Sulfate	ND		1.0	0.24	mg/L			01/12/23 06:53	1

Lab Sample ID: LCS 570-295297/6
Matrix: Water
Analysis Batch: 295297

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	49.3		mg/L		99	90 - 110
Fluoride	2.50	2.41		mg/L		96	90 - 110
Sulfate	50.0	49.7		mg/L		99	90 - 110

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 570-295297/7
Matrix: Water
Analysis Batch: 295297

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			50.0	49.3		mg/L		99	90 - 110	0	15
Fluoride			2.50	2.43		mg/L		97	90 - 110	1	15
Sulfate			50.0	49.6		mg/L		99	90 - 110	0	15

Lab Sample ID: 570-123650-A-1 MS
Matrix: Water
Analysis Batch: 295297

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	35		50.0	92.7		mg/L		116	80 - 120		
Fluoride	0.097	J,DX	2.50	2.73		mg/L		105	80 - 120		
Sulfate	11		50.0	64.1		mg/L		107	80 - 120		

Lab Sample ID: 570-123650-A-1 MSD
Matrix: Water
Analysis Batch: 295297

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	35		50.0	92.7		mg/L		116	80 - 120	0	20
Fluoride	0.097	J,DX	2.50	2.70		mg/L		104	80 - 120	1	20
Sulfate	11		50.0	64.2		mg/L		107	80 - 120	0	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-296367/7
Matrix: Water
Analysis Batch: 296367

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/17/23 13:59	1

Lab Sample ID: LCS 570-296367/8
Matrix: Water
Analysis Batch: 296367

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	23.9		ug/L		96	85 - 115		

Lab Sample ID: LCSD 570-296367/9
Matrix: Water
Analysis Batch: 296367

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	23.8		ug/L		95	85 - 115	0	15

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: 570-123690-P-1 MS
Matrix: Water
Analysis Batch: 296367

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	120	EY	50.0	206	EY LM	ug/L		171	80 - 120

Lab Sample ID: 570-123690-P-1 MSD
Matrix: Water
Analysis Batch: 296367

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	120	EY	50.0	185	EY LM	ug/L		130	80 - 120	10	15

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-295991/1-A
Matrix: Water
Analysis Batch: 296174

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 295991

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L		01/16/23 07:05	01/16/23 11:53	1

Lab Sample ID: LCS 570-295991/2-A
Matrix: Water
Analysis Batch: 296174

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 295991

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	500	498	J,DX	ug/L		100	85 - 115

Lab Sample ID: LCSD 570-295991/3-A
Matrix: Water
Analysis Batch: 296174

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 295991

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	500	494	J,DX	ug/L		99	85 - 115	1	20

Lab Sample ID: 570-123670-D-1-C MS
Matrix: Water
Analysis Batch: 296174

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 295991

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	75	J,DX	500	583		ug/L		102	80 - 120

Lab Sample ID: 570-123670-D-1-D MSD
Matrix: Water
Analysis Batch: 296174

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 295991

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	75	J,DX	500	576		ug/L		100	80 - 120	1	20

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: MB 570-297038/1-A
Matrix: Water
Analysis Batch: 297581

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L			01/20/23 19:11	1

Lab Sample ID: LCS 570-297038/2-A
Matrix: Water
Analysis Batch: 297581

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			500	483	J,DX	ug/L		97	85 - 115		

Lab Sample ID: LCSD 570-297038/3-A
Matrix: Water
Analysis Batch: 297581

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	495	J,DX	ug/L		99	85 - 115	2	20

Lab Sample ID: 570-123653-2 MS
Matrix: Water
Analysis Batch: 297581

Client Sample ID: Outfall010_20230111_Comp_F
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron	68	J,DX BU	500	564		ug/L		99	80 - 120		

Lab Sample ID: 570-123653-2 MSD
Matrix: Water
Analysis Batch: 297581

Client Sample ID: Outfall010_20230111_Comp_F
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	68	J,DX BU	500	564		ug/L		99	80 - 120	0	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-295993/1-A
Matrix: Water
Analysis Batch: 296199

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 295993

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0	0.36	ug/L		01/16/23 07:29	01/16/23 11:51	1
Cadmium	ND		1.0	0.13	ug/L		01/16/23 07:29	01/16/23 11:51	1
Copper	ND		2.0	0.32	ug/L		01/16/23 07:29	01/16/23 11:51	1
Lead	ND		1.0	0.12	ug/L		01/16/23 07:29	01/16/23 11:51	1
Selenium	ND		2.0	0.52	ug/L		01/16/23 07:29	01/16/23 11:51	1
Silver	ND		1.0	0.23	ug/L		01/16/23 07:29	01/16/23 11:51	1
Thallium	ND		1.0	0.11	ug/L		01/16/23 07:29	01/16/23 11:51	1
Beryllium	ND		0.50	0.26	ug/L		01/16/23 07:29	01/16/23 11:51	1
Arsenic	ND		1.0	0.16	ug/L		01/16/23 07:29	01/16/23 11:51	1
Iron	ND		20	3.7	ug/L		01/16/23 07:29	01/16/23 11:51	1
Nickel	ND		2.0	0.17	ug/L		01/16/23 07:29	01/16/23 11:51	1
Vanadium	ND		2.0	0.17	ug/L		01/16/23 07:29	01/16/23 11:51	1
Aluminum	ND		15	8.6	ug/L		01/16/23 07:29	01/16/23 11:51	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-295993/1-A
Matrix: Water
Analysis Batch: 296199

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 295993

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	ND		20	2.8	ug/L		01/16/23 07:29	01/16/23 11:51	1
Chromium	ND		2.0	0.14	ug/L		01/16/23 07:29	01/16/23 11:51	1

Lab Sample ID: LCS 570-295993/2-A
Matrix: Water
Analysis Batch: 296199

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 295993

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	80.0	81.0		ug/L		101	85 - 115
Cadmium	80.0	80.5		ug/L		101	85 - 115
Copper	80.0	81.2		ug/L		102	85 - 115
Lead	80.0	80.5		ug/L		101	85 - 115
Selenium	80.0	78.9		ug/L		99	85 - 115
Silver	80.0	80.2		ug/L		100	85 - 115
Thallium	80.0	80.1		ug/L		100	85 - 115
Beryllium	80.0	80.7		ug/L		101	85 - 115
Arsenic	80.0	80.3		ug/L		100	85 - 115
Iron	800	810		ug/L		101	85 - 115
Nickel	80.0	80.5		ug/L		101	85 - 115
Vanadium	80.0	80.0		ug/L		100	85 - 115
Aluminum	80.0	76.0		ug/L		95	85 - 115
Zinc	80.0	79.5		ug/L		99	85 - 115
Chromium	80.0	81.0		ug/L		101	85 - 115

Lab Sample ID: LCSD 570-295993/3-A
Matrix: Water
Analysis Batch: 296199

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 295993

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	80.0	79.1		ug/L		99	85 - 115	2	20
Cadmium	80.0	78.3		ug/L		98	85 - 115	3	20
Copper	80.0	80.4		ug/L		100	85 - 115	1	20
Lead	80.0	79.8		ug/L		100	85 - 115	1	20
Selenium	80.0	78.2		ug/L		98	85 - 115	1	20
Silver	80.0	77.6		ug/L		97	85 - 115	3	20
Thallium	80.0	79.4		ug/L		99	85 - 115	1	20
Beryllium	80.0	79.6		ug/L		100	85 - 115	1	20
Arsenic	80.0	77.0		ug/L		96	85 - 115	4	20
Iron	800	806		ug/L		101	85 - 115	0	20
Nickel	80.0	80.2		ug/L		100	85 - 115	0	20
Vanadium	80.0	78.9		ug/L		99	85 - 115	1	20
Aluminum	80.0	74.4		ug/L		93	85 - 115	2	20
Zinc	80.0	77.7		ug/L		97	85 - 115	2	20
Chromium	80.0	79.4		ug/L		99	85 - 115	2	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-123670-D-1-F MS
Matrix: Water
Analysis Batch: 296199

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 295993

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.72	J,DX	100	97.0		ug/L		96	80 - 120
Cadmium	ND		100	99.6		ug/L		100	80 - 120
Copper	4.4		100	104		ug/L		99	80 - 120
Lead	0.68	J,DX	100	101		ug/L		100	80 - 120
Selenium	ND		100	97.0		ug/L		97	80 - 120
Silver	ND		50.0	49.0		ug/L		98	80 - 120
Thallium	ND		100	100		ug/L		100	80 - 120
Beryllium	ND		100	98.7		ug/L		99	80 - 120
Arsenic	1.0		100	98.9		ug/L		98	80 - 120
Iron	520		100	634	BB	ug/L		112	80 - 120
Nickel	1.8	J,DX	100	102		ug/L		100	80 - 120
Vanadium	2.2		100	101		ug/L		99	80 - 120
Aluminum	470		100	644	BB	ug/L		172	80 - 120
Zinc	9.7	J,DX	100	107		ug/L		97	80 - 120
Chromium	0.88	J,DX	100	101		ug/L		100	80 - 120

Lab Sample ID: 570-123670-D-1-G MSD
Matrix: Water
Analysis Batch: 296199

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 295993

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	0.72	J,DX	100	96.3		ug/L		96	80 - 120	1	20
Cadmium	ND		100	102		ug/L		102	80 - 120	2	20
Copper	4.4		100	106		ug/L		102	80 - 120	2	20
Lead	0.68	J,DX	100	102		ug/L		101	80 - 120	1	20
Selenium	ND		100	96.5		ug/L		97	80 - 120	1	20
Silver	ND		50.0	50.3		ug/L		101	80 - 120	3	20
Thallium	ND		100	99.7		ug/L		100	80 - 120	0	20
Beryllium	ND		100	100		ug/L		100	80 - 120	2	20
Arsenic	1.0		100	99.6		ug/L		99	80 - 120	1	20
Iron	520		100	611	BB	ug/L		89	80 - 120	4	20
Nickel	1.8	J,DX	100	103		ug/L		102	80 - 120	2	20
Vanadium	2.2		100	102		ug/L		100	80 - 120	1	20
Aluminum	470		100	617	BB	ug/L		145	80 - 120	4	20
Zinc	9.7	J,DX	100	108		ug/L		98	80 - 120	1	20
Chromium	0.88	J,DX	100	101		ug/L		101	80 - 120	1	20

Lab Sample ID: MB 570-296510/1-A
Matrix: Water
Analysis Batch: 296754

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0	0.36	ug/L			01/18/23 10:06	1
Cadmium	ND		1.0	0.13	ug/L			01/18/23 10:06	1
Copper	ND		2.0	0.32	ug/L			01/18/23 10:06	1
Lead	ND		1.0	0.12	ug/L			01/18/23 10:06	1
Selenium	ND		2.0	0.52	ug/L			01/18/23 10:06	1
Silver	ND		1.0	0.23	ug/L			01/18/23 10:06	1
Thallium	ND		1.0	0.11	ug/L			01/18/23 10:06	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-296510/1-A
Matrix: Water
Analysis Batch: 296754

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.50	0.26	ug/L			01/18/23 10:06	1
Arsenic	ND		1.0	0.16	ug/L			01/18/23 10:06	1
Iron	ND		20	3.7	ug/L			01/18/23 10:06	1
Nickel	ND		2.0	0.17	ug/L			01/18/23 10:06	1
Vanadium	ND		2.0	0.17	ug/L			01/18/23 10:06	1
Aluminum	ND		15	8.6	ug/L			01/18/23 10:06	1
Zinc	ND		20	2.8	ug/L			01/18/23 10:06	1
Chromium	ND		2.0	0.14	ug/L			01/18/23 10:06	1

Lab Sample ID: LCS 570-296510/2-A
Matrix: Water
Analysis Batch: 296754

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	80.0	74.4		ug/L		93	85 - 115
Cadmium	80.0	73.6		ug/L		92	85 - 115
Copper	80.0	75.7		ug/L		95	85 - 115
Lead	80.0	75.5		ug/L		94	85 - 115
Selenium	80.0	72.7		ug/L		91	85 - 115
Silver	80.0	73.1		ug/L		91	85 - 115
Thallium	80.0	74.6		ug/L		93	85 - 115
Beryllium	80.0	75.4		ug/L		94	85 - 115
Arsenic	80.0	72.8		ug/L		91	85 - 115
Iron	800	762		ug/L		95	85 - 115
Nickel	80.0	75.3		ug/L		94	85 - 115
Vanadium	80.0	74.4		ug/L		93	85 - 115
Aluminum	80.0	79.1		ug/L		99	85 - 115
Zinc	80.0	74.3		ug/L		93	85 - 115
Chromium	80.0	74.7		ug/L		93	85 - 115

Lab Sample ID: LCSD 570-296510/3-A
Matrix: Water
Analysis Batch: 296754

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	80.0	76.7		ug/L		96	85 - 115	3	20
Cadmium	80.0	75.7		ug/L		95	85 - 115	3	20
Copper	80.0	76.9		ug/L		96	85 - 115	2	20
Lead	80.0	77.0		ug/L		96	85 - 115	2	20
Selenium	80.0	73.1		ug/L		91	85 - 115	1	20
Silver	80.0	75.5		ug/L		94	85 - 115	3	20
Thallium	80.0	76.2		ug/L		95	85 - 115	2	20
Beryllium	80.0	75.6		ug/L		95	85 - 115	0	20
Arsenic	80.0	74.1		ug/L		93	85 - 115	2	20
Iron	800	778		ug/L		97	85 - 115	2	20
Nickel	80.0	76.9		ug/L		96	85 - 115	2	20
Vanadium	80.0	76.2		ug/L		95	85 - 115	2	20
Aluminum	80.0	79.8		ug/L		100	85 - 115	1	20
Zinc	80.0	74.9		ug/L		94	85 - 115	1	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-296510/3-A
Matrix: Water
Analysis Batch: 296754

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chromium			80.0	76.3		ug/L		95	85 - 115	2	20

Lab Sample ID: 570-123653-2 MS
Matrix: Water
Analysis Batch: 296754

Client Sample ID: Outfall010_20230111_Comp_F
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Antimony	0.46	J,DX BU	80.0	78.4		ug/L		97	80 - 120		
Cadmium	ND	BU	80.0	76.6		ug/L		96	80 - 120		
Copper	2.4	BU	80.0	81.1		ug/L		98	80 - 120		
Lead	0.27	J,DX BU	80.0	78.3		ug/L		98	80 - 120		
Selenium	ND	BU	80.0	77.0		ug/L		96	80 - 120		
Silver	ND	BU	80.0	75.5		ug/L		94	80 - 120		
Thallium	ND	BU	80.0	77.4		ug/L		97	80 - 120		
Beryllium	ND	BU	80.0	79.0		ug/L		99	80 - 120		
Arsenic	1.5	BU	80.0	77.9		ug/L		95	80 - 120		
Iron	130	BU	800	899		ug/L		96	80 - 120		
Nickel	1.1	J,DX BU	80.0	78.8		ug/L		97	80 - 120		
Vanadium	1.3	J,DX BU	80.0	78.4		ug/L		96	80 - 120		
Aluminum	210	BU	80.0	302		ug/L		109	80 - 120		
Zinc	4.2	J,DX BU	80.0	80.7		ug/L		96	80 - 120		
Chromium	0.39	J,DX BU	80.0	77.5		ug/L		96	80 - 120		

Lab Sample ID: 570-123653-2 MSD
Matrix: Water
Analysis Batch: 296754

Client Sample ID: Outfall010_20230111_Comp_F
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	0.46	J,DX BU	80.0	77.9		ug/L		97	80 - 120	1	20
Cadmium	ND	BU	80.0	75.6		ug/L		95	80 - 120	1	20
Copper	2.4	BU	80.0	80.8		ug/L		98	80 - 120	0	20
Lead	0.27	J,DX BU	80.0	78.9		ug/L		98	80 - 120	1	20
Selenium	ND	BU	80.0	77.7		ug/L		97	80 - 120	1	20
Silver	ND	BU	80.0	75.1		ug/L		94	80 - 120	1	20
Thallium	ND	BU	80.0	77.5		ug/L		97	80 - 120	0	20
Beryllium	ND	BU	80.0	77.3		ug/L		97	80 - 120	2	20
Arsenic	1.5	BU	80.0	77.6		ug/L		95	80 - 120	0	20
Iron	130	BU	800	874		ug/L		93	80 - 120	3	20
Nickel	1.1	J,DX BU	80.0	77.7		ug/L		96	80 - 120	1	20
Vanadium	1.3	J,DX BU	80.0	77.7		ug/L		96	80 - 120	1	20
Aluminum	210	BU	80.0	282		ug/L		84	80 - 120	7	20
Zinc	4.2	J,DX BU	80.0	79.0		ug/L		93	80 - 120	2	20
Chromium	0.39	J,DX BU	80.0	77.3		ug/L		96	80 - 120	0	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-295795/1-A
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 295795

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		01/13/23 16:10	01/16/23 18:50	1

Lab Sample ID: LCS 570-295795/2-A
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 295795

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	8.51		ug/L		106	85 - 115

Lab Sample ID: LCSD 570-295795/3-A
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 295795

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	8.00	8.65		ug/L		108	85 - 115	2	10

Lab Sample ID: 570-123545-A-2-C MS
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 295795

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		8.00	8.68		ug/L		108	85 - 115

Lab Sample ID: 570-123545-A-2-D MSD
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 295795

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		8.00	8.57		ug/L		107	85 - 115	1	10

Lab Sample ID: MB 570-295846/1-B
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 295898

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		01/13/23 18:30	01/16/23 19:52	1

Lab Sample ID: LCS 570-295846/2-B
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 295898

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	8.40		ug/L		105	85 - 115

Lab Sample ID: LCSD 570-295846/3-B
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 295898

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	8.00	8.29		ug/L		104	85 - 115	1	10

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: 570-123462-B-15-E MS
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 295898

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		8.00	8.85		ug/L		111	85 - 115

Lab Sample ID: 570-123462-B-15-F MSD
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 295898

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		8.00	8.33		ug/L		104	85 - 115	6	10

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-296127/11
Matrix: Water
Analysis Batch: 296127

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			01/13/23 14:05	1

Lab Sample ID: LCS 570-296127/12
Matrix: Water
Analysis Batch: 296127

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	255		ug/L		102	90 - 110

Lab Sample ID: LCSD 570-296127/13
Matrix: Water
Analysis Batch: 296127

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	250	255		ug/L		102	90 - 110	0	20

Lab Sample ID: MRL 570-296127/10
Matrix: Water
Analysis Batch: 296127

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	4.46	J,DX	ug/L		89	50 - 150

Lab Sample ID: 570-123567-H-4 MS
Matrix: Water
Analysis Batch: 296127

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	ND		250	235		ug/L		94	70 - 130

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate (Continued)

Lab Sample ID: 570-123567-H-4 MSD
Matrix: Water
Analysis Batch: 296127

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	ND		250	227		ug/L		91	70 - 130	3	30

Lab Sample ID: 570-123567-H-4 DU
Matrix: Water
Analysis Batch: 296127

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cyanide, Total	ND		ND		ug/L		NC	

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-296459/1
Matrix: Water
Analysis Batch: 296459

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			01/17/23 13:25	1

Lab Sample ID: LCS 570-296459/2
Matrix: Water
Analysis Batch: 296459

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	1020		mg/L		102	84 - 108

Lab Sample ID: LCSD 570-296459/3
Matrix: Water
Analysis Batch: 296459

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1010		mg/L		101	84 - 108	1	10

Lab Sample ID: 570-123834-A-1 DU
Matrix: Water
Analysis Batch: 296459

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	170		185		mg/L		10	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-296270/1
Matrix: Water
Analysis Batch: 296270

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/16/23 19:56	1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCS 570-296270/2
Matrix: Water
Analysis Batch: 296270

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	98.0		mg/L		98	77 - 116		

Lab Sample ID: LCSD 570-296270/3
Matrix: Water
Analysis Batch: 296270

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	96.0		mg/L		96	77 - 116	2	10

Lab Sample ID: 590-19616-A-1 DU
Matrix: Water
Analysis Batch: 296270

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	1000			1070		mg/L				4	10

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Job ID: 570-123653-1

GC/MS Semi VOA

Prep Batch: 296476

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	625	
MB 570-296476/1-A	Method Blank	Total/NA	Water	625	
LCS 570-296476/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-296476/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 298807

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-296476/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	296476
LCSD 570-296476/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	296476

Analysis Batch: 299094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	625.1 SIM	296476
MB 570-296476/1-A	Method Blank	Total/NA	Water	625.1 SIM	296476

Prep Batch: 299585

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1 - RE	Outfall010_20230111_Comp	Total/NA	Water	625	
MB 570-299585/1-A	Method Blank	Total/NA	Water	625	
LCS 570-299585/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-299585/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 299894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1 - RE	Outfall010_20230111_Comp	Total/NA	Water	625.1 SIM	299585
MB 570-299585/1-A	Method Blank	Total/NA	Water	625.1 SIM	299585
LCS 570-299585/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	299585
LCSD 570-299585/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	299585

GC Semi VOA

Prep Batch: 296435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	608	
MB 570-296435/1-A	Method Blank	Total/NA	Water	608	
LCS 570-296435/2-A	Lab Control Sample	Total/NA	Water	608	
LCS 570-296435/4-A	Lab Control Sample	Total/NA	Water	608	
LCSD 570-296435/3-A	Lab Control Sample Dup	Total/NA	Water	608	
LCSD 570-296435/5-A	Lab Control Sample Dup	Total/NA	Water	608	

Analysis Batch: 296586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-296435/1-A	Method Blank	Total/NA	Water	608.3	296435
LCS 570-296435/2-A	Lab Control Sample	Total/NA	Water	608.3	296435
LCSD 570-296435/3-A	Lab Control Sample Dup	Total/NA	Water	608.3	296435

Analysis Batch: 296909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	608.3	296435

GC Semi VOA

Analysis Batch: 297324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	608.3	296435
MB 570-296435/1-A	Method Blank	Total/NA	Water	608.3	296435
LCS 570-296435/4-A	Lab Control Sample	Total/NA	Water	608.3	296435
LCSD 570-296435/5-A	Lab Control Sample Dup	Total/NA	Water	608.3	296435

HPLC/IC

Analysis Batch: 295297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	300.0	
MB 570-295297/5	Method Blank	Total/NA	Water	300.0	
LCS 570-295297/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-295297/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-123650-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
570-123650-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 295597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	218.6	
MB 570-295597/4	Method Blank	Total/NA	Water	218.6	
LCS 570-295597/5	Lab Control Sample	Total/NA	Water	218.6	
LCSD 570-295597/6	Lab Control Sample Dup	Total/NA	Water	218.6	
570-123922-D-2 MS	Matrix Spike	Total/NA	Water	218.6	
570-123922-D-2 MSD	Matrix Spike Duplicate	Total/NA	Water	218.6	

Analysis Batch: 296367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	314.0	
MB 570-296367/7	Method Blank	Total/NA	Water	314.0	
LCS 570-296367/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-296367/9	Lab Control Sample Dup	Total/NA	Water	314.0	
570-123690-P-1 MS	Matrix Spike	Total/NA	Water	314.0	
570-123690-P-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 296501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	NO2NO3 Calc	

Metals

Analysis Batch: 294588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total Recoverable	Water	SM 2340B	
570-123653-2	Outfall010_20230111_Comp_F	Dissolved	Water	SM 2340B	

Prep Batch: 295795

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	245.1	
MB 570-295795/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-295795/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-295795/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
570-123545-A-2-C MS	Matrix Spike	Total/NA	Water	245.1	

Metals (Continued)

Prep Batch: 295795 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123545-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	

Filtration Batch: 295846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-2	Outfall010_20230111_Comp_F	Dissolved	Water	Filtration	
MB 570-295846/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-295846/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-295846/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-123462-B-15-E MS	Matrix Spike	Dissolved	Water	Filtration	
570-123462-B-15-F MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Prep Batch: 295898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-2	Outfall010_20230111_Comp_F	Dissolved	Water	245.1	295846
MB 570-295846/1-B	Method Blank	Dissolved	Water	245.1	295846
LCS 570-295846/2-B	Lab Control Sample	Dissolved	Water	245.1	295846
LCSD 570-295846/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	295846
570-123462-B-15-E MS	Matrix Spike	Dissolved	Water	245.1	295846
570-123462-B-15-F MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	295846

Prep Batch: 295991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total Recoverable	Water	200.7	
MB 570-295991/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 570-295991/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
LCSD 570-295991/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7	
570-123670-D-1-C MS	Matrix Spike	Total Recoverable	Water	200.7	
570-123670-D-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7	

Prep Batch: 295993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total Recoverable	Water	200.8	
MB 570-295993/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-295993/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-295993/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-123670-D-1-F MS	Matrix Spike	Total Recoverable	Water	200.8	
570-123670-D-1-G MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	

Analysis Batch: 296174

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total Recoverable	Water	200.7 Rev 4.4	295991
MB 570-295991/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	295991
LCS 570-295991/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	295991
LCSD 570-295991/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	295991
570-123670-D-1-C MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	295991
570-123670-D-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	295991

Analysis Batch: 296199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total Recoverable	Water	200.8	295993
MB 570-295993/1-A	Method Blank	Total Recoverable	Water	200.8	295993

Metals (Continued)

Analysis Batch: 296199 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-295993/2-A	Lab Control Sample	Total Recoverable	Water	200.8	295993
LCSD 570-295993/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	295993
570-123670-D-1-F MS	Matrix Spike	Total Recoverable	Water	200.8	295993
570-123670-D-1-G MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	295993

Analysis Batch: 296261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	245.1	295795
570-123653-2	Outfall010_20230111_Comp_F	Dissolved	Water	245.1	295898
MB 570-295795/1-A	Method Blank	Total/NA	Water	245.1	295795
MB 570-295846/1-B	Method Blank	Dissolved	Water	245.1	295898
LCS 570-295795/2-A	Lab Control Sample	Total/NA	Water	245.1	295795
LCS 570-295846/2-B	Lab Control Sample	Dissolved	Water	245.1	295898
LCSD 570-295795/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	295795
LCSD 570-295846/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	295898
570-123462-B-15-E MS	Matrix Spike	Dissolved	Water	245.1	295898
570-123462-B-15-F MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	295898
570-123545-A-2-C MS	Matrix Spike	Total/NA	Water	245.1	295795
570-123545-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	295795

Filtration Batch: 296510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-2	Outfall010_20230111_Comp_F	Dissolved	Water	Filtration	
MB 570-296510/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-296510/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-296510/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-123653-2 MS	Outfall010_20230111_Comp_F	Dissolved	Water	Filtration	
570-123653-2 MSD	Outfall010_20230111_Comp_F	Dissolved	Water	Filtration	

Analysis Batch: 296754

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-2	Outfall010_20230111_Comp_F	Dissolved	Water	200.8	296510
MB 570-296510/1-A	Method Blank	Dissolved	Water	200.8	296510
LCS 570-296510/2-A	Lab Control Sample	Dissolved	Water	200.8	296510
LCSD 570-296510/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	296510
570-123653-2 MS	Outfall010_20230111_Comp_F	Dissolved	Water	200.8	296510
570-123653-2 MSD	Outfall010_20230111_Comp_F	Dissolved	Water	200.8	296510

Filtration Batch: 297038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-2	Outfall010_20230111_Comp_F	Dissolved	Water	Filtration	
MB 570-297038/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-297038/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-297038/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-123653-2 MS	Outfall010_20230111_Comp_F	Dissolved	Water	Filtration	
570-123653-2 MSD	Outfall010_20230111_Comp_F	Dissolved	Water	Filtration	

Analysis Batch: 297581

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-2	Outfall010_20230111_Comp_F	Dissolved	Water	200.7 Rev 4.4	297038
MB 570-297038/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	297038

Metals (Continued)

Analysis Batch: 297581 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-297038/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	297038
LCSD 570-297038/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	297038
570-123653-2 MS	Outfall010_20230111_Comp_F	Dissolved	Water	200.7 Rev 4.4	297038
570-123653-2 MSD	Outfall010_20230111_Comp_F	Dissolved	Water	200.7 Rev 4.4	297038

General Chemistry

Analysis Batch: 296127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	Kelada 01	
MB 570-296127/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-296127/12	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-296127/13	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-296127/10	Lab Control Sample	Total/NA	Water	Kelada 01	
570-123567-H-4 MS	Matrix Spike	Total/NA	Water	Kelada 01	
570-123567-H-4 MSD	Matrix Spike Duplicate	Total/NA	Water	Kelada 01	
570-123567-H-4 DU	Duplicate	Total/NA	Water	Kelada 01	

Analysis Batch: 296270

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	SM 2540D	
MB 570-296270/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-296270/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-296270/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
590-19616-A-1 DU	Duplicate	Total/NA	Water	SM 2540D	

Analysis Batch: 296459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	SM 2540C	
MB 570-296459/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-296459/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-296459/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
570-123834-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 296555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	218.6 CR3	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-1
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Client Sample ID: Outfall010_20230111_Comp
Lab Sample ID: 570-123653-1
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			1035.9 mL	2 mL	296476	01/17/23 13:55	UM1W	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	299094	01/27/23 12:06	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Prep	625	RE		1047.8 mL	2 mL	299585	01/30/23 13:57	UWEZ	EET CAL 4
Total/NA	Analysis	625.1 SIM	RE	1	1 mL	1 mL	299894	01/31/23 16:11	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Prep	608			1500 mL	1 mL	296435	01/17/23 12:18	USUL	EET CAL 4
Total/NA	Analysis	608.3		1	1 mL	1 mL	296909	01/19/23 13:36	N5Y3	EET CAL 4
	Instrument ID: GC52A									
Total/NA	Prep	608			1500 mL	1 mL	296435	01/17/23 12:18	USUL	EET CAL 4
Total/NA	Analysis	608.3		1	1 mL	1 mL	297324	01/20/23 15:23	AJ2Q	EET CAL 4
	Instrument ID: GC66									
Total/NA	Analysis	218.6		1	4 mL	4 mL	295597	01/13/23 07:23	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	300.0		1	4 mL	4 mL	295297	01/12/23 08:17	PS	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	314.0		1	4 mL	4 mL	296367	01/17/23 17:49	M5Z3	EET CAL 4
	Instrument ID: IC13									
Total/NA	Analysis	NO2NO3 Calc		1			296501	01/17/23 15:00	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total Recoverable	Prep	200.7			50 mL	50 mL	295991	01/16/23 07:05	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			296174	01/16/23 12:38	P1R	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.8			50 mL	50 mL	295993	01/16/23 07:29	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			296199	01/16/23 12:11	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Prep	245.1			25 mL	50 mL	295795	01/13/23 16:10	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			296261	01/16/23 19:33	C0YH	EET CAL 4
	Instrument ID: HG8									
Total Recoverable	Analysis	SM 2340B		1			294588	01/18/23 16:34	P1R	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	218.6 CR3		1			296555	01/17/23 17:49	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	296127	01/13/23 16:45	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	296459	01/17/23 13:25	ZL7L	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	296270	01/16/23 19:56	BDH9	EET CAL 4
	Instrument ID: BAL62									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-1
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Client Sample ID: Outfall010_20230111_Comp_F
Lab Sample ID: 570-123653-2
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	297038	01/19/23 10:40	ECX6	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			297581	01/20/23 19:23	P1R	EET CAL 4
	Instrument ID:	ICP11								
Dissolved	Filtration	Filtration			50 mL	50 mL	296510	01/17/23 15:47	W1BQ	EET CAL 4
Dissolved	Analysis	200.8		1			296754	01/18/23 10:12	Y2WS	EET CAL 4
	Instrument ID:	ICPMS10								
Dissolved	Filtration	Filtration			25 mL	25 mL	295846	01/13/23 18:17	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	295898	01/13/23 18:30	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			296261	01/16/23 20:17	C0YH	EET CAL 4
	Instrument ID:	HG8								
Dissolved	Analysis	SM 2340B		1			294588	01/24/23 16:34	P1R	EET CAL 4
	Instrument ID:	NOEQUIP								

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-1
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-1
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method	Method Description	Protocol	Laboratory
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
608.3	Organochlorine Pesticides in Water	EPA	EET CAL 4
608.3	Polychlorinated Biphenyls (PCBs) (GC)	EPA	EET CAL 4
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CAL 4
218.6 CR3	Chromium, Trivalent (Calculation)	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
608	Liquid-Liquid Extraction (Separatory Funnel)	EPA	EET CAL 4
625	Liquid-Liquid Extraction	EPA	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-1
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123653-1	Outfall010_20230111_Comp	Water	01/11/23 09:45	01/11/23 19:10
570-123653-2	Outfall010_20230111_Comp_F	Water	01/11/23 09:45	01/11/23 19:10

123653

Error on COC, please add Arsenic and Beryllium for total and dissolved metals
K. Rapp 1/24/23

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Annual Outfall [003-007 009, 010] Outfall 010 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	Project Manager: Katherine Miller 520.289.8606; 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

ANALYSIS REQUIRED

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.7): Al, B, Fe, Ni, V Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	TCDD (and all congeners) (E1613B)	Cl-, F-, SO4, NO3+NO2-N, Perchlorate (E300)	TDS (SM2540C/E160.1)	TSS (160.2 (SM2540D))	Total Dissolved Metals (E200.7): Al, B, Fe, Ni, V Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA	Cyanide (SM4500-CN-E / E335.2)	Priority Pollutants-Pesticides+PCBs (E608)	Total Recoverable Metals: Mercury (E245.1)	Total Dissolved Metals: Mercury (E245.1)		Comments
			R/A	R	R/A	R	A	R/A		R		R	R	A	R	R		
Outfall 010	Outfall010_20230111_Comp	1/11/2023 1545	WM	500 mL Poly	1	HNO_3	85	No	X											X			
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	500 mL Poly	2	None	135	No			X												48 hours Holding Time NO3 & NO2
			WM	500 mL Poly	1	None	155	No				X											
			WM	1 L Poly	1	None	185	No					X										
			WM	500 mL Poly	1	NaOH	220	No									X						
			WM	2.5 Gal Cube	1	None	225	No							X								Unfiltered and unpreserved analysis. Separate RAD onto another workorder
			WM	1 L Glass Amber	1	None	230	No															Analyze duplicate, not MS/MSD.
			WM	1 Gal Cube	6	None	235	No								X							Only test if first or second rain events of the year. Deliver to ABC Labs in Ventura, CA
			WM	1 L Glass Amber	2	None	250	No											X				
	Outfall010_20230111_Comp_F	1/11/2023 1545	WM	1 L Poly	1	None	195	No						X									Filter and preserve w/in 24hrs of receipt at lab
			WM	borosilicate vials	1	None	320	No													X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall010_20230111_Comp_Extra	1/11/2023 1545	WM	1 L Glass Amber	2	None	250	No		H													Hold
			WM	500 mL Poly	2	None	135	No			H												Hold
			WM	1 L Glass Amber	2	None	250	No											H				Hold

Legend A = Annual, R = Routine,

Relinquished By: Michelle Dellolah	Date/Time: 1/11/23 1400	Company: H&A	Received By:	Date/Time: 1/11/23 1400	Company: EC
Relinquished By:	Date/Time: 1/11/23 1910	Company: EC	Received By:	Date/Time: 1/11/23 1910	Company:
Relinquished By:	Date/Time:	Company:	Received By:	Date/Time:	Company:

Turn-around time: (Check)
24 Hour: ____ 72 Hour: ____ 10 Day: __X__
48 Hour: ____ 5 Day: ____ Normal: ____

Sample integrity: (Check)
Intact: ____ On Ice: ____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: ____ All Level IV: __X__

* Hand-delivered to ABC Labs with copy of COC

2.3/2.3 1.9/1.9 1.7/17 SCH

570-123653 Chain of Custody

Rainy Season 2019-2020
Version 2

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123653

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address. Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Annual Outfall [003-007 009, 010] Outfall 010 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R/A Total Recoverable Metals: (E200.7): Al, B, Fe, Ni, V Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	R TCDD (and all congeners) (E1613B)	R/A Cl-, F-, SO4, NO3+NO2-N, Perchlorate (E300)	R TDS (SM2540C/E160.1)	A TSS (160.2 (SM2540D))	R/A Total Dissolved Metals (E200.7): Al, B, Fe, Ni, V Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	R Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA *	R Cyanide (SM4500-CN-E / E335.2)	A Priority Pollutants-Pesticides+PCBs (E609)	R Total Recoverable Metals: Mercury (E245.1)	R Total Dissolved Metals: Mercury (E245.1)		Comments
Outfall 010	Outfall010_20230111_Comp	1/11/2023 0945	WM	500 mL Poly	1	HNO_3	85	No	X											X			
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	500 mL Poly	2	None	135	No			X												48 hours Holding Time NO3 & NO2
			WM	500 mL Poly	1	None	155	No				X											
			WM	1 L Poly	1	None	185	No					X										
			WM	500 mL Poly	1	NaOH	220	No										X					
			WM	2.5 Gal Cube	1	None	225	No							X								Unfiltered and unpreserved analysis. Separate RAD onto another workorder
			WM	1 L Glass Amber	1	None	230	No															Analyze duplicate, not MS/MSD.
			* WM	1 Gal Cube	6	None	235	No									X						Only test if first or second rain events of the year Deliver to ABC Labs in Ventura, CA
			WM	1 L Glass Amber	2	None	250	No											X				
	Outfall010_20230111_Comp_F	1/11/2023 0945	WM	1 L Poly	1	None	195	No						X									Filter and preserve w/in 24hrs of receipt at lab
			WM	borosilicate vials	1	None	320	No													X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall010_20230111_Comp_Extra	1/11/2023 0945	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	500 mL Poly	2	None	135	No			H												Hold
			WM	1 L Glass Amber	2	None	250	No											H				Hold

Legend A = Annual, R = Routine,

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	1/11/23 1400	H&A		1/11/23 1400 EC
	1/11/23 1910	EC		1/11/23 1910

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

* Hand-delivered to ABC Labs with copy of COC

2.3/2.3 1.9/1.9 1.7/1.7 SCAL

570-123653 Chain of Custody

Rainy Season 2019-2020
Version 2

4/4/2023 (Rev. 1)

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Annual Outfall [003-007, 009, 010] Outfall 010 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED																	
									A	A	A	A	A													
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Priority Pollutants-SVOCs (E625)	Asbestos (EPA100.2) OF009 only	Chlorpyrifos, Diazinon (E526.2) Weck Labs in Hacienda Heights, CA	Cr (VI), Total (E218.6)														Comments
Outfall 010	Outfall010_20230111_Comp	1/11/2023 1045	WM	1 L Glass Amber	2	None	175	No	X																	
			WM	1L Poly	1	None	270	No		X																Only at Outfall 009
			WM	1 L Glass Amber	2	None	275	No			X															Extract within 24-Hours of sampling.
			WM	500 mL Poly	1	None	260	No				X														
	Outfall010_20230111_Comp_Extra	1/11/2023 1045	WM	1 L Glass Amber	2	None	175	No	H																	Hold
			WM	1 L Glass Amber	2	None	275	No			H															Hold

Legend: A = Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	1/11/23 1400	H&A		1/11/23 1400 EC
	1/11/23 1910 EC			1/11/23 1910

Turn-around time: (Check)
24 Hour _____ 72 Hour _____ 10 Day ___X___
48 Hour _____ 5 Day _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

Rainy Season 2019-2020
Version 2

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s).	COC No: 570-203937 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123653-4
Address: 13715 Rider Trail North ,	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 009 COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actln Total Uranium	900.0/Evaporation Gross Alpha/Beta	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall010_20230111_Comp (570-123653-1)	1/11/23	09 45 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I II, III, IV Other (specify) Primary Deliverable Rank 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	1/12/23 1312				
2						
3						

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-203964 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123653-2
Address: 880 Riverside Parkway,	Due Date Requested: 1/27/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 009 COMP	Project #: 44024446			
Site:	SSOW#:			

Preservation Codes

A - HCL, B NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall010_20230111_Comp (570-123653-1)	1/11/23	09 45 Pacific		Water			X		2	See QAS, Boeing_w/u to zero Use Boeing glassware
Outfall010_20230111_Comp_Extra (570-123653-3)	1/11/23	09 45 Pacific		Water				X	2	See QAS Boeing_w/u to zero Use Boeing glassware

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/12/23 1419				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Monday, January 30, 2023 9:27 AM
To: Virendra Patel
Subject: 200.8 Metals SSFL NPDES

EXTERNAL EMAIL*

Virendra,

Please revise any metals requested as 200.7 to 200.8 for the SSFL NPDES program starting from data collected January 1st, 2023.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123653-1

Login Number: 123653
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/6/2023 12:54:28 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 010 COMP

JOB NUMBER

570-123653-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

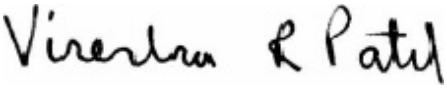
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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2/6/2023 12:54:28 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123653-2
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123653-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123653-2

Comments
No additional comments.

Receipt
The samples were received on 1/11/2023 7:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.3º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: Outfall010_20230111_Comp (570-123653-1), (CCV 320-651543/2) and (MB 320-649091/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Job ID: 570-123653-2

Client Sample ID: Outfall010_20230111_Comp

Lab Sample ID: 570-123653-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	0.00000044	J,DX q	0.0000096	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	0.00000066	J,DX q MB	0.000048	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.00000060	J,DX MB	0.000048	0.00000012	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.00000069	J,DX MB	0.000048	0.00000014	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000023	J,DX q MB	0.000048	0.00000030	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000014	J,DX q MB	0.000048	0.00000030	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.00000086	J,DX MB	0.000048	0.00000026	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.00000080	J,DX MB	0.000048	0.00000015	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000046	J,DX q MB	0.000048	0.00000015	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.00000086	J,DX MB	0.000048	0.00000015	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000060	J,DX MB	0.000048	0.00000014	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000090	MB	0.000048	0.0000025	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000084	J,DX MB	0.000048	0.00000051	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.00000075	J,DX MB q	0.000048	0.00000057	ug/L	1		1613B	Total/NA
OCDD	0.00090	MB	0.000096	0.0000046	ug/L	1		1613B	Total/NA
OCDF	0.00011	MB	0.000096	0.00000064	ug/L	1		1613B	Total/NA
Total TCDD	0.0000019	J,DX q MB	0.0000096	0.00000021	ug/L	1		1613B	Total/NA
Total TCDF	0.00000059	J,DX MB	0.0000096	0.0000000095	ug/L	1		1613B	Total/NA
Total PeCDD	0.00000066	J,DX q MB	0.000048	0.00000021	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000013	J,DX MB	0.000048	0.00000012	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000070	J,DX q MB	0.000048	0.00000026	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000072	J,DX q MB	0.000048	0.00000014	ug/L	1		1613B	Total/NA
Total HpCDD	0.00014	MB	0.000048	0.0000025	ug/L	1		1613B	Total/NA
Total HpCDF	0.000053	J,DX MB q	0.000048	0.00000051	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: Outfall010_20230111_Comp
Lab Sample ID: 570-123653-1
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.00000044	J,DX q	0.0000096	0.00000021	ug/L		01/25/23 04:38	01/28/23 18:02	1
1,2,3,7,8-PeCDD	0.00000066	J,DX q MB	0.000048	0.00000021	ug/L		01/25/23 04:38	01/28/23 18:02	1
1,2,3,7,8-PeCDF	0.00000060	J,DX MB	0.000048	0.00000012	ug/L		01/25/23 04:38	01/28/23 18:02	1
2,3,4,7,8-PeCDF	0.00000069	J,DX MB	0.000048	0.00000014	ug/L		01/25/23 04:38	01/28/23 18:02	1
1,2,3,4,7,8-HxCDD	0.0000023	J,DX q MB	0.000048	0.00000030	ug/L		01/25/23 04:38	01/28/23 18:02	1
1,2,3,6,7,8-HxCDD	0.0000014	J,DX q MB	0.000048	0.00000030	ug/L		01/25/23 04:38	01/28/23 18:02	1
1,2,3,7,8,9-HxCDD	0.00000086	J,DX MB	0.000048	0.00000026	ug/L		01/25/23 04:38	01/28/23 18:02	1
1,2,3,4,7,8-HxCDF	0.00000080	J,DX MB	0.000048	0.00000015	ug/L		01/25/23 04:38	01/28/23 18:02	1
1,2,3,6,7,8-HxCDF	0.00000046	J,DX q MB	0.000048	0.00000015	ug/L		01/25/23 04:38	01/28/23 18:02	1
1,2,3,7,8,9-HxCDF	0.00000086	J,DX MB	0.000048	0.00000015	ug/L		01/25/23 04:38	01/28/23 18:02	1
2,3,4,6,7,8-HxCDF	0.00000060	J,DX MB	0.000048	0.00000014	ug/L		01/25/23 04:38	01/28/23 18:02	1
1,2,3,4,6,7,8-HpCDD	0.000090	MB	0.000048	0.0000025	ug/L		01/25/23 04:38	01/28/23 18:02	1
1,2,3,4,6,7,8-HpCDF	0.0000084	J,DX MB	0.000048	0.00000051	ug/L		01/25/23 04:38	01/28/23 18:02	1
1,2,3,4,7,8,9-HpCDF	0.00000075	J,DX MB q	0.000048	0.00000057	ug/L		01/25/23 04:38	01/28/23 18:02	1
OCDD	0.00090	MB	0.000096	0.0000046	ug/L		01/25/23 04:38	01/28/23 18:02	1
OCDF	0.00011	MB	0.000096	0.00000064	ug/L		01/25/23 04:38	01/28/23 18:02	1
Total TCDD	0.0000019	J,DX q MB	0.0000096	0.00000021	ug/L		01/25/23 04:38	01/28/23 18:02	1
Total TCDF	0.00000059	J,DX MB	0.0000096	0.0000000095	ug/L		01/25/23 04:38	01/28/23 18:02	1
Total PeCDD	0.00000066	J,DX q MB	0.000048	0.00000021	ug/L		01/25/23 04:38	01/28/23 18:02	1
Total PeCDF	0.0000013	J,DX MB	0.000048	0.00000012	ug/L		01/25/23 04:38	01/28/23 18:02	1
Total HxCDD	0.0000070	J,DX q MB	0.000048	0.00000026	ug/L		01/25/23 04:38	01/28/23 18:02	1
Total HxCDF	0.0000072	J,DX q MB	0.000048	0.00000014	ug/L		01/25/23 04:38	01/28/23 18:02	1
Total HpCDD	0.00014	MB	0.000048	0.0000025	ug/L		01/25/23 04:38	01/28/23 18:02	1
Total HpCDF	0.000053	J,DX MB q	0.000048	0.00000051	ug/L		01/25/23 04:38	01/28/23 18:02	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*80*		*25 - 164*	*01/25/23 04:38*	*01/28/23 18:02*	*1*
13C-2,3,7,8-TCDF	*84*		*24 - 169*	*01/25/23 04:38*	*01/28/23 18:02*	*1*
13C-1,2,3,7,8-PeCDD	*79*		*25 - 181*	*01/25/23 04:38*	*01/28/23 18:02*	*1*
13C-1,2,3,7,8-PeCDF	*83*		*24 - 185*	*01/25/23 04:38*	*01/28/23 18:02*	*1*
13C-2,3,4,7,8-PeCDF	*81*		*21 - 178*	*01/25/23 04:38*	*01/28/23 18:02*	*1*
13C-1,2,3,4,7,8-HxCDD	*78*		*32 - 141*	*01/25/23 04:38*	*01/28/23 18:02*	*1*
13C-1,2,3,6,7,8-HxCDD	*86*		*28 - 130*	*01/25/23 04:38*	*01/28/23 18:02*	*1*
13C-1,2,3,4,7,8-HxCDF	*80*		*26 - 152*	*01/25/23 04:38*	*01/28/23 18:02*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: Outfall010_20230111_Comp
Lab Sample ID: 570-123653-1
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,6,7,8-HxCDF	89		26 - 123	01/25/23 04:38	01/28/23 18:02	1
13C-1,2,3,7,8,9-HxCDF	92		29 - 147	01/25/23 04:38	01/28/23 18:02	1
13C-2,3,4,6,7,8-HxCDF	93		28 - 136	01/25/23 04:38	01/28/23 18:02	1
13C-1,2,3,4,6,7,8-HpCDD	81		23 - 140	01/25/23 04:38	01/28/23 18:02	1
13C-1,2,3,4,6,7,8-HpCDF	81		28 - 143	01/25/23 04:38	01/28/23 18:02	1
13C-1,2,3,4,7,8,9-HpCDF	86		26 - 138	01/25/23 04:38	01/28/23 18:02	1
13C-OCDD	90		17 - 157	01/25/23 04:38	01/28/23 18:02	1
13C-OCDF	91		17 - 157	01/25/23 04:38	01/28/23 18:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	94		35 - 197	01/25/23 04:38	01/28/23 18:02	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-2
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: Outfall010_20230111_Comp
Lab Sample ID: 570-123653-1
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.0000096	0.00000037	ug/L		01/25/23 04:38	02/03/23 17:45	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*80*		*24 - 169*	*01/25/23 04:38*	*02/03/23 17:45*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*111*		*35 - 197*	*01/25/23 04:38*	*02/03/23 17:45*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-2
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-123653-1	Outfall010_20230111_Comp	94
570-123653-1 - RA	Outfall010_20230111_Comp	111
MB 320-649091/1-A	Method Blank	95
MB 320-649091/1-A - RA	Method Blank	107

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-649091/2-A	Lab Control Sample	92
LCSD 320-649091/3-A	Lab Control Sample Dup	93

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-2
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-123653-1	Outfall010_20230111_Comp	80	84	79	83	81	78	86	80
570-123653-1 - RA	Outfall010_20230111_Comp		80						
MB 320-649091/1-A	Method Blank	79	84	77	82	83	81	89	84
MB 320-649091/1-A - RA	Method Blank		78						

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-123653-1	Outfall010_20230111_Comp	89	92	93	81	81	86	90	91
570-123653-1 - RA	Outfall010_20230111_Comp								
MB 320-649091/1-A	Method Blank	93	89	93	76	78	81	84	86
MB 320-649091/1-A - RA	Method Blank								

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-649091/2-A	Lab Control Sample	76	80	75	80	79	78	81	76
LCSD 320-649091/3-A	Lab Control Sample Dup	81	86	81	85	83	80	85	80

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-649091/2-A	Lab Control Sample	86	86	88	75	76	79	85	86
LCSD 320-649091/3-A	Lab Control Sample Dup	90	92	93	81	82	87	91	93

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-2
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-649091/1-A
Matrix: Water
Analysis Batch: 650047

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 649091

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000024	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,7,8-PeCDD	0.000000800	J,DX	0.000050	0.00000020	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,7,8-PeCDF	0.000000544	J,DX q	0.000050	0.00000015	ug/L		01/25/23 04:38	01/28/23 15:42	1
2,3,4,7,8-PeCDF	0.000000644	J,DX	0.000050	0.00000017	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,4,7,8-HxCDD	0.00000283	J,DX	0.000050	0.00000020	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,6,7,8-HxCDD	0.000000633	J,DX q	0.000050	0.00000020	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,7,8,9-HxCDD	0.000000719	J,DX q	0.000050	0.00000018	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,4,7,8-HxCDF	0.000000820	J,DX	0.000050	0.00000012	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,6,7,8-HxCDF	0.000000777	J,DX q	0.000050	0.00000012	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,7,8,9-HxCDF	0.00000120	J,DX	0.000050	0.00000013	ug/L		01/25/23 04:38	01/28/23 15:42	1
2,3,4,6,7,8-HxCDF	0.000000608	J,DX	0.000050	0.00000011	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,4,6,7,8-HpCDD	0.00000229	J,DX	0.000050	0.00000026	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,4,6,7,8-HpCDF	0.00000121	J,DX q	0.000050	0.00000015	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,4,7,8,9-HpCDF	0.000000899	J,DX	0.000050	0.00000018	ug/L		01/25/23 04:38	01/28/23 15:42	1
OCDD	0.0000158	J,DX q	0.00010	0.00000025	ug/L		01/25/23 04:38	01/28/23 15:42	1
OCDF	0.00000284	J,DX	0.00010	0.00000020	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total TCDD	0.00000396	J,DX q	0.000010	0.00000024	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total TCDF	0.000000659	J,DX q	0.000010	0.00000013	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total PeCDD	0.000000800	J,DX	0.000050	0.00000020	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total PeCDF	0.00000119	J,DX q	0.000050	0.00000015	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total HxCDD	0.00000418	J,DX q	0.000050	0.00000018	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total HxCDF	0.00000341	J,DX q	0.000050	0.00000011	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total HpCDD	0.00000499	J,DX q	0.000050	0.00000026	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total HpCDF	0.00000235	J,DX q	0.000050	0.00000015	ug/L		01/25/23 04:38	01/28/23 15:42	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*79*		*25 - 164*	*01/25/23 04:38*	*01/28/23 15:42*	*1*
13C-2,3,7,8-TCDF	*84*		*24 - 169*	*01/25/23 04:38*	*01/28/23 15:42*	*1*
13C-1,2,3,7,8-PeCDD	*77*		*25 - 181*	*01/25/23 04:38*	*01/28/23 15:42*	*1*
13C-1,2,3,7,8-PeCDF	*82*		*24 - 185*	*01/25/23 04:38*	*01/28/23 15:42*	*1*
13C-2,3,4,7,8-PeCDF	*83*		*21 - 178*	*01/25/23 04:38*	*01/28/23 15:42*	*1*
13C-1,2,3,4,7,8-HxCDD	*81*		*32 - 141*	*01/25/23 04:38*	*01/28/23 15:42*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-649091/1-A
Matrix: Water
Analysis Batch: 650047

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 649091

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,6,7,8-HxCDD	89		28 - 130	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,4,7,8-HxCDF	84		26 - 152	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,6,7,8-HxCDF	93		26 - 123	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,7,8,9-HxCDF	89		29 - 147	01/25/23 04:38	01/28/23 15:42	1
13C-2,3,4,6,7,8-HxCDF	93		28 - 136	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,4,6,7,8-HpCDD	76		23 - 140	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,4,6,7,8-HpCDF	78		28 - 143	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,4,7,8,9-HpCDF	81		26 - 138	01/25/23 04:38	01/28/23 15:42	1
13C-OCDD	84		17 - 157	01/25/23 04:38	01/28/23 15:42	1
13C-OCDF	86		17 - 157	01/25/23 04:38	01/28/23 15:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	95		35 - 197	01/25/23 04:38	01/28/23 15:42	1

Lab Sample ID: LCS 320-649091/2-A
Matrix: Water
Analysis Batch: 650047

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 649091

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000203		ug/L		102	67 - 158
2,3,7,8-TCDF	0.000200	0.000205		ug/L		103	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.000967		ug/L		97	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.000964		ug/L		96	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000993		ug/L		99	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.000925		ug/L		93	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000965		ug/L		97	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000925		ug/L		92	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.000974		ug/L		97	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000945		ug/L		95	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.000954		ug/L		95	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000959		ug/L		96	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.000949		ug/L		95	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.000968		ug/L		97	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000955		ug/L		95	78 - 138
OCDD	0.00200	0.00189		ug/L		94	78 - 144
OCDF	0.00200	0.00197		ug/L		99	63 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	76		20 - 175
13C-2,3,7,8-TCDF	80		22 - 152
13C-1,2,3,7,8-PeCDD	75		21 - 227
13C-1,2,3,7,8-PeCDF	80		21 - 192
13C-2,3,4,7,8-PeCDF	79		13 - 328
13C-1,2,3,4,7,8-HxCDD	78		21 - 193
13C-1,2,3,6,7,8-HxCDD	81		25 - 163
13C-1,2,3,4,7,8-HxCDF	76		19 - 202
13C-1,2,3,6,7,8-HxCDF	86		21 - 159
13C-1,2,3,7,8,9-HxCDF	86		17 - 205

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-649091/2-A
Matrix: Water
Analysis Batch: 650047

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 649091

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,4,6,7,8-HxCDF	88		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	75		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	76		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	79		20 - 186
13C-OCDD	85		13 - 199
13C-OCDF	86		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	92		31 - 191

Lab Sample ID: LCSD 320-649091/3-A
Matrix: Water
Analysis Batch: 650047

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 649091

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000207		ug/L		103	67 - 158	2	50
2,3,7,8-TCDF			0.000200	0.000210		ug/L		105	75 - 158	2	50
1,2,3,7,8-PeCDD			0.00100	0.000981		ug/L		98	70 - 142	1	50
1,2,3,7,8-PeCDF			0.00100	0.00100		ug/L		100	80 - 134	4	50
2,3,4,7,8-PeCDF			0.00100	0.00101		ug/L		101	68 - 160	1	50
1,2,3,4,7,8-HxCDD			0.00100	0.000956		ug/L		96	70 - 164	3	50
1,2,3,6,7,8-HxCDD			0.00100	0.00100		ug/L		100	76 - 134	4	50
1,2,3,7,8,9-HxCDD			0.00100	0.000997		ug/L		100	64 - 162	8	50
1,2,3,4,7,8-HxCDF			0.00100	0.000994		ug/L		99	72 - 134	2	50
1,2,3,6,7,8-HxCDF			0.00100	0.000990		ug/L		99	84 - 130	5	50
1,2,3,7,8,9-HxCDF			0.00100	0.000975		ug/L		97	78 - 130	2	50
2,3,4,6,7,8-HxCDF			0.00100	0.000996		ug/L		100	70 - 156	4	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000985		ug/L		99	70 - 140	4	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00100		ug/L		100	82 - 122	4	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000984		ug/L		98	78 - 138	3	50
OCDD			0.00200	0.00219		ug/L		109	78 - 144	15	50
OCDF			0.00200	0.00206		ug/L		103	63 - 170	4	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	81		20 - 175
13C-2,3,7,8-TCDF	86		22 - 152
13C-1,2,3,7,8-PeCDD	81		21 - 227
13C-1,2,3,7,8-PeCDF	85		21 - 192
13C-2,3,4,7,8-PeCDF	83		13 - 328
13C-1,2,3,4,7,8-HxCDD	80		21 - 193
13C-1,2,3,6,7,8-HxCDD	85		25 - 163
13C-1,2,3,4,7,8-HxCDF	80		19 - 202
13C-1,2,3,6,7,8-HxCDF	90		21 - 159
13C-1,2,3,7,8,9-HxCDF	92		17 - 205
13C-2,3,4,6,7,8-HxCDF	93		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	81		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	82		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	87		20 - 186

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-649091/3-A
Matrix: Water
Analysis Batch: 650047

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 649091

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-OCDD	91		13 - 199
13C-OCDF	93		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	93		31 - 191

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Lab Sample ID: MB 320-649091/1-A
Matrix: Water
Analysis Batch: 651543

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 649091

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF - RA	ND		0.000010	0.00000035	ug/L		01/25/23 04:38	02/03/23 17:08	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF - RA	78		24 - 169	01/25/23 04:38	02/03/23 17:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD - RA	107		35 - 197	01/25/23 04:38	02/03/23 17:08	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-2
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Specialty Organics

Prep Batch: 649091

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1 - RA	Outfall010_20230111_Comp	Total/NA	Water	1613B	
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	1613B	
MB 320-649091/1-A - RA	Method Blank	Total/NA	Water	1613B	
MB 320-649091/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-649091/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-649091/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 650047

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	1613B	649091
MB 320-649091/1-A	Method Blank	Total/NA	Water	1613B	649091
LCS 320-649091/2-A	Lab Control Sample	Total/NA	Water	1613B	649091
LCSD 320-649091/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	649091

Analysis Batch: 651543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1 - RA	Outfall010_20230111_Comp	Total/NA	Water	1613B	649091
MB 320-649091/1-A - RA	Method Blank	Total/NA	Water	1613B	649091

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-2
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Client Sample ID: Outfall010_20230111_Comp
Lab Sample ID: 570-123653-1

Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		1040.5 mL	20.0 uL	649091	01/25/23 04:38	FC	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	651543	02/03/23 17:45	GRB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			1040.5 mL	20.0 uL	649091	01/25/23 04:38	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	650047	01/28/23 18:02	GRB	EET SAC
	Instrument ID: 12D5									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-2
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23 *
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-2
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Job ID: 570-123653-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123653-1	Outfall010_20230111_Comp	Water	01/11/23 09:45	01/11/23 19:10

123653

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address. Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Annual Outfall [003-007 009, 010] Outfall 010 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R/A Total Recoverable Metals: (E200.7): Al, B, Fe, Ni, V Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	R TCDD (and all congeners) (E1613B)	R/A Cl-, F-, SO4, NO3+NO2-N, Perchlorate (E300)	R TDS (SM2540C/E160.1)	A TSS (160.2 (SM2540D))	R/A Total Dissolved Metals (E200.7): Al, B, Fe, Ni, V Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	R Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA *	R Cyanide (SM4500-CN-E / E335.2)	A Priority Pollutants-Pesticides+PCBs (E609)	R Total Recoverable Metals: Mercury (E245.1)	R Total Dissolved Metals: Mercury (E245.1)	Comments
									ANALYSIS REQUIRED													
Outfall 010	Outfall010_20230111_Comp	1/11/2023 0945	WM	500 mL Poly	1	HNO_3	85	No	X											X		
			WM	1 L Glass Amber	2	None	110	No		X												
			WM	500 mL Poly	2	None	135	No			X											48 hours Holding Time NO3 & NO2
			WM	500 mL Poly	1	None	155	No				X										
			WM	1 L Poly	1	None	185	No					X									
			WM	500 mL Poly	1	NaOH	220	No										X				
			WM	2.5 Gal Cube	1	None	225	No							X							Unfiltered and unpreserved analysis. Separate RAD onto another workorder
			WM	1 L Glass Amber	1	None	230	No														Analyze duplicate, not MS/MSD.
			WM *	1 Gal Cube	8	None	235	No								X						Only test if first or second rain events of the year * Deliver to ABC Labs in Ventura, CA
			WM	1 L Glass Amber	2	None	250	No											X			
	Outfall010_20230111_Comp_F	1/11/2023 0945	WM	1 L Poly	1	None	195	No						X								Filter and preserve w/in 24hrs of receipt at lab
			WM	borosilicate vials	1	None	320	No													X	Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall010_20230111_Comp_Extra	1/11/2023 0945	WM	1 L Glass Amber	2	None	110	No		H												Hold
			WM	500 mL Poly	1	None	135	No			H											Hold
			WM	1 L Glass Amber	2	None	250	No											H			Hold

Legend A = Annual, R = Routine,

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	1/11/23 1400	H&A		1/11/23 1400 EC
	1/11/23 1910	EC		1/11/23 1910

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

* Hand-delivered to ABC Labs with copy of COC

2.3/2.3 1.9/1.9 1.7/17 SCL

570-123653 Chain of Custody

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2/6/2023

Rainy Season 2019-2020
Version 2

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Annual Outfall [003-007, 009, 010] Outfall 010 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED																			
									A	A	A	A	A															
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Priority Pollutants-SVOCs (E625)	Asbestos (EPA100.2) OF009 only	Chlorpyrifos, Diazinon (E526.2) Weck Labs in Hacienda Heights, CA	Cr (VI), Total (E218.6)																Comments
Outfall 010	Outfall010_20230111_Comp	1/11/2023 1045	WM	1 L Glass Amber	2	None	175	No	X																			
			WM	1L Poly	1	None	270	No		X																		Only at Outfall 009
			WM	1 L Glass Amber	2	None	275	No			X																	Extract within 24-Hours of sampling.
			WM	500 mL Poly	1	None	260	No				X																
	Outfall010_20230111_Comp_Extra	1/11/2023 1045	WM	1 L Glass Amber	2	None	175	No	H																			Hold
			WM	1 L Glass Amber	2	None HCl	275	No			H																	Hold

Legend: A = Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	1/11/23 1400	H&A		1/11/23 1400 EC
	1/11/23 1910 EC			1/11/23 1910

Turn-around time: (Check)
24 Hour _____ 72 Hour _____ 10 Day ___X___
48 Hour _____ 5 Day _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s).	COC No: 570-203937 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123653-4
Address: 13715 Rider Trail North ,	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 009 COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actln Total Uranium	900 0/Evaporation Gross Alpha/Beta	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall010_20230111_Comp (570-123653-1)	1/11/23	09 45 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I II, III, IV Other (specify) Primary Deliverable Rank 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	1/12/23 1312				
2						
3						

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-203964 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123653-2
Address: 880 Riverside Parkway,	Due Date Requested: 1/27/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 009 COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall010_20230111_Comp (570-123653-1)	1/11/23	09 45 Pacific		Water			X		2	See QAS, Boeing_w/u to zero Use Boeing glassware
Outfall010_20230111_Comp_Extra (570-123653-3)	1/11/23	09 45 Pacific		Water				X	2	See QAS Boeing_w/u to zero Use Boeing glassware

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203964.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123653-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/27/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 009 COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall010_20230111_Comp (570-123653-1)	1/11/23	09:45 Pacific		Water			X		2	See QAS, Boeing_w/u to zero; Use Boeing glassware.
Outfall010_20230111_Comp_Extra (570-123653-3)	1/11/23	09:45 Pacific		Water				X	2	See QAS, Boeing_w/u to zero; Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/12/23 1419			1/13/23 905	BSK
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: Seal | Cooler Temperature(s) °C and Other Remarks: 3.0c

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123653-2

Login Number: 123653
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123653-2

Login Number: 123653
List Number: 3
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 01/13/23 02:43 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.0c 4.4c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/2/2023 2:53:50 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 009 COMP

JOB NUMBER

570-123653-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization

Virendra R Patil

Generated
2/2/2023 2:53:50 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123653-3
Project/Site: Boeing SSFL NPDES - Outfall 009 COMP

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123653-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123653-3

Comments
No additional comments.

Receipt
The samples were received on 1/11/2023 7:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.3º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Asbestos 100.2: This method was subcontracted to EMSL Analytical Inc - LA Testing - Pasadena. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-3
Project/Site: Boeing SSFL NPDES - Outfall 009 COMP

Method	Method Description	Protocol	Laboratory
100.2	EPA 100.2 Asbestos in Drinking Water	EPA	EMSL-LA

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EMSL-LA = EMSL Analytical Inc - LA Testing - Pasadena, 520 Mission Street, South Pasadena, CA 91030

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-3
Project/Site: Boeing SSFL NPDES - Outfall 009 COMP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123653-1	Outfall010_20230111_Comp	Water	01/11/23 09:45	01/11/23 19:10

LA Testing
520 Mission Street South Pasadena, CA 91030
Phone/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order ID: 322300777
Customer ID: 32CALS51
Customer PO: 44024446
Project ID:

Attn: Virendra Patel
Eurofins Calscience, Inc.
2841 Dow Ave, Suite 100
Tustin, CA 92780

Phone: (714) 895-5494
Fax: (714) 894-7501
Received: 01/13/2023
Analyzed: 01/27/2023

Proj: 570-203966.1 | 570-123653-3 | 44024446/ Boeing SSFL NPDES - Outfall 009 COMP

Test Report: Determination of Asbestos Structures ≥ 0.5 µm & > 10µm in Water Performed by the 100.2 Method (EPA 600/R-94/134)

Sample ID Client / EMSL	Sample Filtration Date/Time	Original Sample Vol. Filtered (ml)	Effective Filter Area (mm^2)	Area Analyzed (mm^2)	ASBESTOS					
						Asbestos Types	Fibers Detected	Analytical Sensitivity	Concentration	Confidence Limits
								MFL (million fibers per liter)		
Outfall010_20230111_Comp (570-123653-1) 322300777-0001	1/26/2023 02:30 PM	1	1288	0.2580	≥ 0.5 µm	Chrysotile	2	5.00	10.00	1.20 - 36.00
					> 10 µm only	None Detected	ND	5.00	<5.00	0.00 - 18.00

Collection Date/Time: *01/11/2023 09:45 AM*

Sample ozonated prior to analysis due to lab receipt time exceeding 48hr method hold time.

Analyst(s)
Kyeong Corbin (1)

Jerry Drapala Ph.D, Laboratory Manager
or Other Approved Signatory

Any questions please contact Jerry Drapala.

Initial report from: 01/27/2023 09:16:01

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

#322300777 Chain of Custody Record

eurofins | Environment Testing

2/2/2023

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203966.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: EMSL Analytical, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123653-3
Address: 520 Mission Street,	Due Date Requested: 1/24/2023			
City: South Pasadena	TAT Requested (days):			
State, Zip: CA, 91030				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 009 COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Asbestos 100.2)/ Asbestos 100.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall010_20230111_Comp (570-123653-1)	1/11/23	09:45 Pacific		Water			X	1	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:
Empty Kit Relinquished by:	Date: Time: Method of Shipment:

	Date/Time	Company	Received by	Date/Time	Company
Relinquished by:	01/12/23 14:22	EC	Joel Parrish (FX)	1/13/23 0955	LA Testing
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 0.4 °C

Ver: 06/08/2021

ICOC No:
570-203966

#322300777

Containers

Count	Container Type	Preservative

Bottle Order Information

Bottle Order:
Bottle Order #:
Request From Client: 1/12/2023
Date Order Posted:
Order Status: Ready To Process
Prepared By:
Deliver By Date: ***1/12/2023 11:59:00PM***
Lab Project Number:
PWSID:

#322300777

Order Completion Information

Creator: Estevan Rodriguez
Filled by:
Sent Date:
Sent Via:
Tracking #:

2/2/2023

Sets	Bottles/Set	Qty	Bottle Type Description	Preservative	Method	Matrix	Sample Type	Comments	Lot #

Notes to Field Staff:

Scan QR code for field sampler instructions

Health and Safety Notes:

Preservative	Comment

Relinquished By	Company	Date	Time	Received By	Company	Seal #:
		1/13/23	0955			Seal #:
						Seal #:
Relinquished By	Company	Date	Time	Received By	Company	Seal #:
						Seal #:
						Seal #:

Please notify your PM immediately if an error is found in shipment. When returning samples, please return all provided QC samples.

#322300777

2/2/2023

Page 12 of 19

Page 4 of 6

Please notify your PM immediately if an error is found in shipment. When returning samples, please return all provided QC samples.

OrderID: 322300777

McKissack, Annette 322300777

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Thursday, January 26, 2023 12:30 PM
To: McKissack, Annette; Donald Burley
Cc: LA Testing Lab - Pasadena
Subject: RE: 570-203966.1 | 570-123653-3 | 44024446/ Boeing SSFL NPDES - Outfall 009 COMP

[EXTERNAL E-MAIL]

Annette –

Hi. Please analyze as "Waste Water" – please report both screening levels.

Best Regards,

Virendra Patel
Project Manager

Eurofins Environment Testing Southwest, LLC
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895 5494
Direct: 657-210-6327
Mobile: 714-887-9901

Virendra.Patel@ET.EurofinsUS.com
www.EurofinsUS.com/Env

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From: McKissack, Annette <amckissack@latesting.com>
Sent: Thursday, January 26, 2023 12:16 PM
To: Virendra Patel <Virendra.Patel@et.eurofinsus.com>; Donald Burley <Donald.Burley@et.eurofinsus.com>
Cc: LA Testing Lab - Pasadena <pasadenalab@EMSL.com>
Subject: RE: 570-203966.1 | 570-123653-3 | 44024446/ Boeing SSFL NPDES - Outfall 009 COMP

EXTERNAL EMAIL*

Hello Don,

I see that Virendra is out of office. Can you please assist with the request below.

Thank you,

Annette McKissack
Administration
LA Testing 520 Mission Street South Pasadena, CA 91030
Phone: 323-254-9960 Toll Free: 800-303-0047

From: McKissack, Annette
Sent: Thursday, January 26, 2023 12:12 PM
To: Patel, Virendra <Virendra.Patel@et.eurofinsus.com>
Cc: LA Testing Lab - Pasadena <pasadenalab@EMSL.com>
Subject: 570-203966.1 | 570-123653-3 | 44024446/ Boeing SSFL NPDES - Outfall 009 COMP

Hello,

Please confirm if the water sample for this project will be analyzed for drinking water or waste water.

Thank you,

Annette McKissack
Administration
LA Testing 520 Mission Street South Pasadena, CA 91030
Phone: 323-254-9960 Toll Free: 800-303-0047

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123653

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address. Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Annual Outfall [003-007 009, 010] Outfall 010 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R/A: Total Recoverable Metals: (E200.7): Al, B, Fe, Ni, V Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	R: TCDD (and all congeners) (E1613B)	R/A: Cl-, F-, SO4, NO3+NO2-N, Perchlorate (E300)	R: TDS (SM2540C/E160.1)	A: TSS (160.2 (SM2540D))	R/A: Total Dissolved Metals (E200.7): Al, B, Fe, Ni, V Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	R: Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R: Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA *	R: Cyanide (SM4500-CN-E / E335.2)	A: Priority Pollutants-Pesticides+PCBs (E609)	R: Total Recoverable Metals: Mercury (E245.1)	R: Total Dissolved Metals: Mercury (E245.1)		Comments
Outfall 010	Outfall010_20230111_Comp	1/11/2023 0945	WM	500 mL Poly	1	HNO_3	85	No	X											X			
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	500 mL Poly	2	None	135	No			X												48 hours Holding Time NO3 & NO2
			WM	500 mL Poly	1	None	155	No				X											
			WM	1 L Poly	1	None	185	No					X										
			WM	500 mL Poly	1	NaOH	220	No										X					
			WM	2.5 Gal Cube	1	None	225	No							X								Unfiltered and unpreserved analysis. Separate RAD onto another workorder
			WM	1 L Glass Amber	1	None	230	No															Analyze duplicate, not MS/MSD.
			* WM	1 Gal Cube	8	None	235	No								X							Only test if first or second rain events of the year * Deliver to ABC Labs in Ventura, CA
			WM	1 L Glass Amber	2	None	250	No											X				
	Outfall010_20230111_Comp_F	1/11/2023 0945	WM	1 L Poly	1	None	195	No						X									Filter and preserve w/in 24hrs of receipt at lab
			WM	borosilicate vials	1	None	320	No													X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall010_20230111_Comp_Extra	1/11/2023 0945	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	500 mL Poly	1	None	135	No			H												Hold
			WM	1 L Glass Amber	2	None	250	No											H				Hold

Legend A = Annual, R = Routine,

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	1/11/23 1400	H&A		1/11/23 1400 EC
	1/11/23 1910	EC		1/11/23 1910

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

* Hand-delivered to ABC Labs with copy of COC

2.3/2.3 1.9/1.9 1.7/17 SCAL

570-123653 Chain of Custody

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2/2/2023

Rainy Season 2019-2020
Version 2

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Annual Outfall [003-007, 009, 010] Outfall 010 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED																	
									A	A	A	A	A													
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Priority Pollutants-SVOCs (E625)	Asbestos (EPA100.2) OF009 only	Chlorpyrifos, Diazinon (E526.2) Weck Labs in Hacienda Heights, CA	Cr (VI), Total (E218.6)														Comments
Outfall 010	Outfall010_20230111_Comp	1/11/2023 1045	WM	1 L Glass Amber	2	None	175	No	X																	
			WM	1L Poly	1	None	270	No		X																Only at Outfall 009
			WM	1 L Glass Amber	2	None	275	No			X															Extract within 24-Hours of sampling.
			WM	500 mL Poly	1	None	260	No				X														
	Outfall010_20230111_Comp_Extra	1/11/2023 1045	WM	1 L Glass Amber	2	None	175	No	H																	Hold
			WM	1 L Glass Amber	2	None	275	No			H															Hold

Legend: A = Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	1/11/23 1400	H&A		1/11/23 1400 EC
	1/11/23 1910 EC			1/11/23 1910

Turn-around time: (Check)
24 Hour _____ 72 Hour _____ 10 Day ___X___
48 Hour _____ 5 Day _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s).	COC No: 570-203937 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123653-4
Address: 13715 Rider Trail North ,	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045	PO #:			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	WO #:			
Email:	Project #: 44024446			
Project Name: Boeing SSFL NPDES - Outfall 009 COMP	SSOW#:			
Site:				

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actln Total Uranium	900 0/Evaporation Gross Alpha/Beta	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall010_20230111_Comp (570-123653-1)	1/11/23	09 45 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I II, III, IV Other (specify) Primary Deliverable Rank 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/12/23 1312	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-203964 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123653-2
Address: 880 Riverside Parkway,	Due Date Requested: 1/27/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 009 COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall010_20230111_Comp (570-123653-1)	1/11/23	09 45 Pacific		Water			X		2	See QAS, Boeing_w/u to zero Use Boeing glassware
Outfall010_20230111_Comp_Extra (570-123653-3)	1/11/23	09 45 Pacific		Water				X	2	See QAS Boeing_w/u to zero Use Boeing glassware

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/12/23 1419				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123653-3

Login Number: 123653
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/13/2023 3:02:46 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 010 COMP

JOB NUMBER

570-123653-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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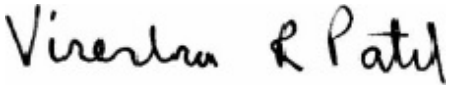
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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2/13/2023 3:02:46 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-4
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc. Job ID: 570-123653-4
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Job ID: 570-123653-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123653-4

Comments
No additional comments.

Receipt
The samples were received on 1/11/2023 7:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.3º C.

Receipt Exceptions

The reference method requires samples to be preserved to a pH of <2 SU. The following samples were received with insufficient preservation at a pH of >2 SU: Outfall010_20230111_Comp (570-123653-1), Outfall010_20230111_Comp_F (570-123653-2) and Outfall010_20230111_Comp_Extra (570-123653-3). 570-123653-R-1. The sample was preserved to the appropriate pH in the laboratory.

RAD
Method 900.0: Gross Alpha and Gross Beta batch 597777
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall010_20230111_Comp (570-123653-1), (LCS 160-597777/2-A), (LCSB 160-597777/3-A), (MB 160-597777/1-A), (570-123670-K-1-F), (570-123670-K-1-I DU), (570-123670-K-1-G MS) and (570-123670-K-1-H MSBT)

Method 901.1: Gamma Prep Batch 160-597241
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Job ID: 570-123653-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

Outfall010_20230111_Comp (570-123653-1), (570-123234-AI-1-D) and (570-123234-AI-1-E DU)

Method 903.0: Radium-226 batch 598605
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall010_20230111_Comp (570-123653-1), (LCS 160-597154/2-A), (LCSD 160-597154/3-A) and (MB 160-597154/1-A)

Method 904.0: Radium-228 batch 597175
The LCS recovered at (126%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCSD 160-597175/3-A)

Method 904.0: Radium-228 batch 597175
The detection goal was not met for the following sample(s). Sample was prepped at a reduced volume due to the presence of matrix interferences: Outfall010_20230111_Comp (570-123653-1). Analytical results are reported with the detection limit achieved.

Method 904.0: Radium-228 batch 597175
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date
Outfall010_20230111_Comp (570-123653-1), (LCS 160-597175/2-A), (LCSD 160-597175/3-A) and (MB 160-597175/1-A)

Method 905: Strontium-90 batch 597176
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall010_20230111_Comp (570-123653-1), (LCS 160-597176/2-A), (LCSD 160-597176/3-A) and (MB 160-597176/1-A)

Method 906.0: Tritium 597488
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall010_20230111_Comp (570-123653-1), (LCS 160-597488/2-A), (MB 160-597488/1-A), (570-123038-U-2-B), (570-123038-U-2-C DU), (570-123414-Q-1-B) and (570-123414-Q-1-C MS)

Method A-01-R: Isotopic Uranium batch 597259
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall010_20230111_Comp (570-123653-1), (LCS 160-597259/2-A), (MB 160-597259/1-A), (570-123038-A-2-B) and (570-123038-A-2-C DU)

Method ExtChrom: Uranium Prep Batch 160-597259

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: Outfall010_20230111_Comp (570-123653-1).

Method PrecSep_0: Radium-228 Prep Batch 160-597175

The following sample was prepared at a reduced aliquot due to Matrix: Outfall010_20230111_Comp (570-123653-1). A laboratory control

Job ID: 570-123653-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21: Radium-226 Prep Batch 160-597154

The following sample was prepared at a reduced aliquot due to Matrix: Outfall010_20230111_Comp (570-123653-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 160-597176

The following sample was prepared at a reduced aliquot due to Matrix: Outfall010_20230111_Comp (570-123653-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-4
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Client Sample ID: Outfall010_20230111_Comp
Lab Sample ID: 570-123653-1

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-4
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: Outfall010_20230111_Comp
Date Collected: 01/11/23 09:45
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123653-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	1.53		1.02	1.03	3.00	1.44	pCi/L	01/23/23 11:47	01/31/23 08:30	1
Gross Beta	2.28		0.736	0.770	4.00	0.952	pCi/L	01/23/23 11:47	01/31/23 08:30	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-4
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: Outfall010_20230111_Comp
Date Collected: 01/11/23 09:45
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123653-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-4.92	U	8.65	8.67	20.0	10.3	pCi/L	01/17/23 13:13	02/06/23 19:39	1
Potassium-40	37.9	U	81.8	82.0		105	pCi/L	01/17/23 13:13	02/06/23 19:39	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-4
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: Outfall010_20230111_Comp
Date Collected: 01/11/23 09:45
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123653-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0584	U	0.164	0.164	1.00	0.300	pCi/L	01/17/23 10:52	02/08/23 09:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*67.9*		*40 - 110*	*01/17/23 10:52*	*02/08/23 09:39*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-4
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: Outfall010_20230111_Comp
Date Collected: 01/11/23 09:45
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123653-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.120	U G	0.721	0.721	1.00	1.39	pCi/L	01/17/23 11:26	01/24/23 11:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*67.9*		*40 - 110*	*01/17/23 11:26*	*01/24/23 11:26*	*1*
Y Carrier	*83.7*		*40 - 110*	*01/17/23 11:26*	*01/24/23 11:26*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-4
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: Outfall010_20230111_Comp
Date Collected: 01/11/23 09:45
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123653-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.683	U	0.456	0.459	3.00	0.697	pCi/L	01/17/23 11:33	01/26/23 17:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*83.8*		*40 - 110*	*01/17/23 11:33*	*01/26/23 17:47*	*1*
Y Carrier	*73.3*		*40 - 110*	*01/17/23 11:33*	*01/26/23 17:47*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-4
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: Outfall010_20230111_Comp
Lab Sample ID: 570-123653-1
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	32.4	U	179	179	500	323	pCi/L	01/19/23 12:02	01/21/23 00:05	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-4
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: Outfall010_20230111_Comp
Date Collected: 01/11/23 09:45
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123653-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.166	U	0.210	0.210	1.00	0.320	pCi/L	01/17/23 16:09	01/25/23 14:45	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*81.3*		*30 - 110*	*01/17/23 16:09*	*01/25/23 14:45*	*1*

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-4
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
570-123653-1	Outfall010_20230111_Comp	67.9
LCS 160-597154/2-A	Lab Control Sample	87.7
LCSD 160-597154/3-A	Lab Control Sample Dup	91.3
MB 160-597154/1-A	Method Blank	94.7

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-123653-1	Outfall010_20230111_Comp	67.9	83.7
LCS 160-597175/2-A	Lab Control Sample	87.7	82.6
LCSD 160-597175/3-A	Lab Control Sample Dup	91.3	81.9
MB 160-597175/1-A	Method Blank	94.7	84.5

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-123653-1	Outfall010_20230111_Comp	83.8	73.3
LCS 160-597176/2-A	Lab Control Sample	82.2	72.1
LCSD 160-597176/3-A	Lab Control Sample Dup	82.8	70.3
MB 160-597176/1-A	Method Blank	79.4	74.0

Tracer/Carrier Legend

Sr = Sr Carrier

Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-123038-A-2-C DU	Duplicate	86.2
570-123653-1	Outfall010_20230111_Comp	81.3
LCS 160-597259/2-A	Lab Control Sample	87.1
MB 160-597259/1-A	Method Blank	85.3

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-597777/1-A
Matrix: Water
Analysis Batch: 598614

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597777

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.08001	U	0.636	0.636	3.00	1.19	pCi/L	01/23/23 11:47	01/30/23 19:04	1
Gross Beta	-0.2904	U	0.420	0.421	4.00	0.816	pCi/L	01/23/23 11:47	01/30/23 19:04	1

Lab Sample ID: LCS 160-597777/2-A
Matrix: Water
Analysis Batch: 598614

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597777

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	51.22		7.48	3.00	2.46	pCi/L	101	75 - 125

Lab Sample ID: LCSB 160-597777/3-A
Matrix: Water
Analysis Batch: 598614

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597777

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.7	67.77		7.31	4.00	0.875	pCi/L	92	75 - 125

Lab Sample ID: 570-123670-K-1-G MS
Matrix: Water
Analysis Batch: 598850

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 597777

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	0.308	U	50.5	50.97		7.16	3.00	1.38	pCi/L	100	60 - 140

Lab Sample ID: 570-123670-K-1-H MSBT
Matrix: Water
Analysis Batch: 598850

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 597777

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	2.89		73.7	75.66		8.09	4.00	0.820	pCi/L	99	60 - 140

Lab Sample ID: 570-123670-K-1-I DU
Matrix: Water
Analysis Batch: 598850

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597777

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	0.308	U	1.179	U	0.892	3.00	1.28	pCi/L	0.51	1
Gross Beta	2.89		2.634		0.775	4.00	0.892	pCi/L	0.16	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-597241/1-A
Matrix: Water
Analysis Batch: 599334

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597241

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-2.826	U	8.51	8.52	20.0	10.3	pCi/L	01/17/23 13:03	02/03/23 22:10	1
Potassium-40	-36.61	U	86.6	86.7		115	pCi/L	01/17/23 13:03	02/03/23 22:10	1

Lab Sample ID: LCS 160-597241/2-A
Matrix: Water
Analysis Batch: 599336

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597241

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	138000		16400		297	pCi/L	102	75 - 125
Cesium-137	41000	42160		5020	20.0	79.9	pCi/L	103	75 - 125
Cobalt-60	18200	18990		2260		44.3	pCi/L	105	75 - 125

Lab Sample ID: 570-123234-AI-1-E DU
Matrix: Water
Analysis Batch: 599354

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597241

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	-5.12	U	-0.5107	U	7.06	20.0	8.40	pCi/L	0.29	1
Potassium-40	-33.9	U	67.97		68.0		67.4	pCi/L	0.58	1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-597154/1-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597154

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.006957	U	0.0458	0.0458	1.00	0.0910	pCi/L	01/17/23 10:52	02/08/23 09:29	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.7*		*40 - 110*	*01/17/23 10:52*	*02/08/23 09:29*	*1*

Lab Sample ID: LCS 160-597154/2-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597154

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	11.79		1.20	1.00	0.0822	pCi/L	104	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*87.7*		*40 - 110*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-597154/3-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597154

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	11.35		1.16	1.00	0.0760	pCi/L	100	75 - 125	0.19	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*91.3*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-597175/1-A
Matrix: Water
Analysis Batch: 598066

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597175

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.05046	U	0.253	0.253	1.00	0.464	pCi/L	01/17/23 11:26	01/24/23 11:23	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.7*		*40 - 110*	*01/17/23 11:26*	*01/24/23 11:23*	*1*
Y Carrier	*84.5*		*40 - 110*	*01/17/23 11:26*	*01/24/23 11:23*	*1*

Lab Sample ID: LCS 160-597175/2-A
Matrix: Water
Analysis Batch: 598066

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597175

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.25	9.815		1.34	1.00	0.590	pCi/L	119	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*87.7*		*40 - 110*
Y Carrier	*82.6*		*40 - 110*

Lab Sample ID: LCSD 160-597175/3-A
Matrix: Water
Analysis Batch: 598066

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597175

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.25	10.40		1.37	1.00	0.516	pCi/L	126	75 - 125	0.21	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*91.3*		*40 - 110*
Y Carrier	*81.9*		*40 - 110*

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-597176/1-A
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597176

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.03721	U	0.223	0.223	3.00	0.408	pCi/L	01/17/23 11:33	01/26/23 17:45	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*79.4*		*40 - 110*	*01/17/23 11:33*	*01/26/23 17:45*	*1*
Y Carrier	*74.0*		*40 - 110*	*01/17/23 11:33*	*01/26/23 17:45*	*1*

Lab Sample ID: LCS 160-597176/2-A
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597176

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.38	7.564		0.882	3.00	0.355	pCi/L	103	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*82.2*		*40 - 110*
Y Carrier	*72.1*		*40 - 110*

Lab Sample ID: LCSD 160-597176/3-A
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597176

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.38	7.695		0.910	3.00	0.459	pCi/L	104	75 - 125	0.07	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*82.8*		*40 - 110*
Y Carrier	*70.3*		*40 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-597488/1-A
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597488

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-84.68	U	164	165	500	326	pCi/L	01/19/23 12:02	01/20/23 20:22	1

Lab Sample ID: LCS 160-597488/2-A
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597488

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2120	1848		381	500	324	pCi/L	87	75 - 125		

Method: 906.0 - Tritium, Total (LSC) (Continued)

Lab Sample ID: 570-123414-Q-1-C MS
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 597488

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium	-26.1	U	2120	1947		376	500	297	pCi/L	92	60 - 140		

Lab Sample ID: 570-123038-U-2-C DU
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597488

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Tritium	-83.3	U		-97.75	U	162	500	324	pCi/L			0.05	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-597259/1-A
Matrix: Water
Analysis Batch: 598217

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597259

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.05873	U	0.09433	0.09455	1.00	0.172	pCi/L	01/17/23 16:09	01/25/23 14:42	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*85.3*		*30 - 110*	*01/17/23 16:09*	*01/25/23 14:42*	*1*

Lab Sample ID: LCS 160-597259/2-A
Matrix: Water
Analysis Batch: 598218

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597259

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	12.19		1.46	1.00	0.151	pCi/L	96	75 - 125		
Uranium-238			13.0	13.33		1.56	1.00	0.135	pCi/L	102	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*87.1*		*30 - 110*

Lab Sample ID: 570-123038-A-2-C DU
Matrix: Water
Analysis Batch: 598230

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597259

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Total Uranium	0.128			0.07847	U	0.1118	1.00	0.163	pCi/L			0.22	1

Tracer	*DU %Yield*	*DU Qualifier*	*Limits*
Uranium-232	*86.2*		*30 - 110*

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Prep Batch: 597154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	PrecSep-21	
MB 160-597154/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-597154/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-597154/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 597175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	PrecSep_0	
MB 160-597175/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-597175/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-597175/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 597176

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	PrecSep-7	
MB 160-597176/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-597176/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-597176/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 597241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	Fill_Geo-0	
MB 160-597241/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-597241/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-123234-AI-1-E DU	Duplicate	Total/NA	Water	Fill_Geo-0	

Prep Batch: 597259

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	ExtChrom	
MB 160-597259/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-597259/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-123038-A-2-C DU	Duplicate	Total/NA	Water	ExtChrom	

Prep Batch: 597488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	LSC_Dist_Susp	
MB 160-597488/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-597488/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
570-123414-Q-1-C MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
570-123038-U-2-C DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 597777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123653-1	Outfall010_20230111_Comp	Total/NA	Water	Evaporation	
MB 160-597777/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-597777/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-597777/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-123670-K-1-G MS	Matrix Spike	Total/NA	Water	Evaporation	
570-123670-K-1-H MSBT	Matrix Spike	Total/NA	Water	Evaporation	
570-123670-K-1-I DU	Duplicate	Total/NA	Water	Evaporation	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-4
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Client Sample ID: Outfall010_20230111_Comp
Lab Sample ID: 570-123653-1
Date Collected: 01/11/23 09:45
Matrix: Water
Date Received: 01/11/23 19:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Evaporation			200.00 mL	1.0 g	597777	01/23/23 11:47	MST	EET SL
Total/NA	Analysis	900.0		1			598850	01/31/23 08:30	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	597241	01/17/23 13:13	JML	EET SL
Total/NA	Analysis	901.1		1			599359	02/06/23 19:39	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	PrecSep-21			499.71 mL	1.0 g	597154	01/17/23 10:52	DJP	EET SL
Total/NA	Analysis	903.0		1			599672	02/08/23 09:39	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			499.71 mL	1.0 g	597175	01/17/23 11:26	DJP	EET SL
Total/NA	Analysis	904.0		1			598066	01/24/23 11:26	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-7			504.55 mL	1.0 g	597176	01/17/23 11:33	DJP	EET SL
Total/NA	Analysis	905		1			598283	01/26/23 17:47	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	LSC_Dist_Susp			100.10 mL	1.0 g	597488	01/19/23 12:02	ZR	EET SL
Total/NA	Analysis	906.0		1			597784	01/21/23 00:05	REV	EET SL
	Instrument ID: LSCAQUA									
Total/NA	Prep	ExtChrom			251.44 mL	1.0 mL	597259	01/17/23 16:09	SAC	EET SL
Total/NA	Analysis	A-01-R		1			598249	01/25/23 14:45	FLC	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-4
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	02-09-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-4
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-4
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123653-1	Outfall010_20230111_Comp	Water	01/11/23 09:45	01/11/23 19:10

123653

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address. Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Annual Outfall [003-007 009, 010] Outfall 010 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R/A Total Recoverable Metals: (E200.7): Al, B, Fe, Ni, V Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	R TCDD (and all congeners) (E1613B)	R/A Cl-, F-, SO4, NO3+NO2-N, Perchlorate (E300)	R TDS (SM2540C/E160.1)	A TSS (160.2 (SM2540D))	R/A Total Dissolved Metals (E200.7): Al, B, Fe, Ni, V Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	R Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA *	R Cyanide (SM4500-CN-E / E335.2)	A Priority Pollutants-Pesticides+PCBs (E609)	R Total Recoverable Metals: Mercury (E245.1)	R Total Dissolved Metals: Mercury (E245.1)		Comments
Outfall 010	Outfall010_20230111_Comp	1/11/2023 0945	WM	500 mL Poly	1	HNO_3	85	No	X											X			
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	500 mL Poly	2	None	135	No			X												48 hours Holding Time NO3 & NO2
			WM	500 mL Poly	1	None	155	No				X											
			WM	1 L Poly	1	None	185	No					X										
			WM	500 mL Poly	1	NaOH	220	No										X					
			WM	2.5 Gal Cube	1	None	225	No							X								Unfiltered and unpreserved analysis, Separate RAD onto another workorder
			WM	1 L Glass Amber	1	None	230	No															Analyze duplicate, not MS/MSD.
			* WM	1 Gal Cube	8	None	235	No									X						Only test if first or second rain events of the year Deliver to ABC Labs in Ventura, CA
			WM	1 L Glass Amber	2	None	250	No											X				
	Outfall010_20230111_Comp_F	1/11/2023 0945	WM	1 L Poly	1	None	195	No						X									Filter and preserve w/in 24hrs of receipt at lab
			WM	borosilicate vials	1	None	320	No													X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall010_20230111_Comp_Extra	1/11/2023 0945	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	500 mL Poly	2	None	135	No			H												Hold
			WM	1 L Glass Amber	2	None	250	No											H				Hold

Legend A = Annual, R = Routine,

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	1/11/23 1400	H&A		1/11/23 1400 EC
	1/11/23 1910	EC		1/11/23 1910

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

* Hand-delivered to ABC Labs with copy of COC

2.3/2.3 1.9/1.9 1.7/17 SCL

570-123653 Chain of Custody

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2/13/2023

Rainy Season 2019-2020
Version 2

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Annual Outfall [003-007, 009, 010] Outfall 010 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED																			
									A	A	A	A	A															
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Priority Pollutants-SVOCs (E625)	Asbestos (EPA100.2) OF009 only	Chlorpyrifos, Diazinon (E526.2) Weck Labs in Hacienda Heights, CA	Cr (VI), Total (E218.6)																Comments
Outfall 010	Outfall010_20230111_Comp	1/11/2023 1045	WM	1 L Glass Amber	2	None	175	No	X																			
			WM	1L Poly	1	None	270	No		X																		Only at Outfall 009
			WM	1 L Glass Amber	2	None	275	No			X																	Extract within 24-Hours of sampling.
			WM	500 mL Poly	1	None	260	No				X																
	Outfall010_20230111_Comp_Extra	1/11/2023 1045	WM	1 L Glass Amber	2	None	175	No	H																			Hold
			WM	1 L Glass Amber	2	None HCl	275	No			H																	Hold

Legend: A = Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	1/11/23 1400	H&A		1/11/23 1400 EC
	1/11/23 1910 EC			1/11/23 1910

Turn-around time: (Check)
24 Hour _____ 72 Hour _____ 10 Day ___X___
48 Hour _____ 5 Day _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s).	COC No: 570-203937 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123653-4
Address: 13715 Rider Trail North ,	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045	PO #:			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	WO #:			
Email:	Project #: 44024446			
Project Name: Boeing SSFL NPDES - Outfall 009 COMP	SSOW#:			
Site:				

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actln Total Uranium	900.0/Evaporation Gross Alpha/Beta	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall010_20230111_Comp (570-123653-1)	1/11/23	09 45 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I II, III, IV Other (specify) Primary Deliverable Rank 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/12/23 1312	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-203964 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123653-2
Address: 880 Riverside Parkway,	Due Date Requested: 1/27/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 009 COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall010_20230111_Comp (570-123653-1)	1/11/23	09 45 Pacific		Water			X		2	See QAS, Boeing_w/u to zero Use Boeing glassware
Outfall010_20230111_Comp_Extra (570-123653-3)	1/11/23	09 45 Pacific		Water				X	2	See QAS Boeing_w/u to zero Use Boeing glassware

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/12/23 1419				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203937.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123653-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 009 COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Evaporation Gross Alpha/Beta	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall010_20230111_Comp (570-123653-1)	1/11/23	09:45 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature] FEDEX	1/12/23 1312		FEDEX		
2	Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 1/13/23 9:00AM	Company ETASTL
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203937.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123653-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 009 COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/FIII_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Evaporation Gross Alpha/Beta	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall010_20230111_Comp (570-123653-1)	1/11/23	09:45 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by:	Date/Time: 1/12/23 1312	Company	Received by: FEDEX	Date/Time:	Company		
Relinquished by: FEDEX	Date/Time:	Company	Received by: B. Gonzalez	Date/Time: 1/13/23 9:00AM	Company ETASTL		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company		
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:				

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123653-4

Login Number: 123653
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123653-4

Login Number: 123653
List Number: 2
Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis
List Creation: 01/13/23 03:20 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/16/2023 1:11:01 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 010 COMP

JOB NUMBER

570-123653-5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization

Virendra R Patil

Generated
2/16/2023 1:11:01 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123653-5
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123653-5

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123653-5

Comments
No additional comments.

Receipt
The samples were received on 1/11/2023 7:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.3º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units): This method was subcontracted to Weck Laboratories, Inc.. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-5
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method	Method Description	Protocol	Laboratory
Subcontract	Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units)	None	Weck Lab

Protocol References:

None = None

Laboratory References:

Weck Lab = Weck Laboratories, Inc., 14859 E. Clark Avenue, City of Industry, CA 91745

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-5
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123653-1	Outfall010_20230111_Comp	Water	01/11/23 09:45	01/11/23 19:10

WECK LABORATORIES, INC.

Certificate of Analysis

FINAL REPORT

Work Orders:	3A11195	**Report Date:**	2/14/2023
		Received Date:	1/11/2023
Project:	570-123653-5	**Turnaround Time:**	Normal
		Phones:	(949) 261-1022
		Fax:	(949) 260-3297
Attn:	Virendra Patel	**P.O. #:**	570-123653-5
Client:	Eurofins Calscience - Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780	**Billing Code:**	

Dear Virendra Patel,

Enclosed are the results of analyses for samples received 1/11/23 with the Chain-of-Custody document. The samples were received in good condition, at 4.3 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: Outfall010_20230111_Comp (570-123653-1) — Sampled: 01/11/23 9:45 by Client

3A11195-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 525.2M			**Instr:** GCMS13				
Batch ID: W3A1906 **Preparation:** EPA 625M/SPE			**Prepared:** 01/24/23 08:14				**Analyst:** EFC
Chlorpyrifos	ND	0.0040	0.010	ug/l	1	01/26/23	
Diazinon	ND	0.0034	0.010	ug/l	1	01/26/23	
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*143%*		*50-141*	*Conc: 0.715*		*01/26/23*	*S-04*
Triphenyl phosphate	*306%*		*63-200*	*Conc: 1.53*		*01/26/23*	*S-04*

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Quality Control Results

Semivolatile Organics - Low Level by Tandem GC/MS/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3A1906-BLK1)					**Prepared: 01/24/23**	**Analyzed: 01/26/23**					
Chlorpyrifos	ND	0.0040	0.010	ug/l							
Diazinon	ND	0.0034	0.010	ug/l							
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.530*			*ug/l*	*0.500*		*106*	*50-141*			
Triphenyl phosphate	*0.909*			*ug/l*	*0.500*		*182*	*63-200*			
Blank (W3A1906-BLK2)					**Prepared: 01/24/23**	**Analyzed: 02/04/23**					
Chlorpyrifos	ND	0.0040	0.010	ug/l							
Diazinon	ND	0.0034	0.010	ug/l							
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.296*			*ug/l*	*0.500*		*59*	*50-141*			
Triphenyl phosphate	*0.549*			*ug/l*	*0.500*		*110*	*63-200*			
LCS (W3A1906-BS1)					**Prepared: 01/24/23**	**Analyzed: 01/26/23**					
Chlorpyrifos	0.0635	0.0040	0.010	ug/l	0.0500		127	63-145			
Diazinon	0.0570	0.0034	0.010	ug/l	0.0500		114	25-180			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.454*			*ug/l*	*0.500*		*91*	*50-141*			
Triphenyl phosphate	*0.889*			*ug/l*	*0.500*		*178*	*63-200*			
LCS (W3A1906-BS2)					**Prepared: 01/24/23**	**Analyzed: 02/04/23**					
Chlorpyrifos	0.0386	0.0040	0.010	ug/l	0.0500		77	63-145			
Diazinon	0.0329	0.0034	0.010	ug/l	0.0500		66	25-180			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.298*			*ug/l*	*0.500*		*60*	*50-141*			
Triphenyl phosphate	*0.552*			*ug/l*	*0.500*		*110*	*63-200*			
LCS (W3A1906-BS3)					**Prepared: 01/24/23**	**Analyzed: 02/04/23**					
Chlorpyrifos	0.0337	0.0040	0.010	ug/l	0.0500		67	63-145			
Diazinon	0.0226	0.0034	0.010	ug/l	0.0500		45	25-180			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.236*			*ug/l*	*0.500*		*47*	*50-141*			
Triphenyl phosphate	*0.544*			*ug/l*	*0.500*		*109*	*63-200*			
LCS (W3A1906-BS4)					**Prepared: 01/24/23**	**Analyzed: 02/04/23**					
Chlorpyrifos	0.0368	0.0040	0.010	ug/l	0.0500		74	63-145			
Diazinon	0.0263	0.0034	0.010	ug/l	0.0500		53	25-180			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.265*			*ug/l*	*0.500*		*53*	*50-141*			
Triphenyl phosphate	*0.511*			*ug/l*	*0.500*		*102*	*63-200*			
LCS (W3A1906-BS5)					**Prepared: 01/24/23**	**Analyzed: 02/04/23**					
Chlorpyrifos	0.0384	0.0040	0.010	ug/l	0.0500		77	63-145			
Diazinon	0.0255	0.0034	0.010	ug/l	0.0500		51	25-180			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.304*			*ug/l*	*0.500*		*61*	*50-141*			
Triphenyl phosphate	*0.528*			*ug/l*	*0.500*		*106*	*63-200*			
Matrix Spike (W3A1906-MS1)	**Source: 3A11195-01**				**Prepared: 01/24/23**	**Analyzed: 01/26/23**					
Chlorpyrifos	0.0786	0.0040	0.010	ug/l	0.0500	*ND*	157	37-168			
Diazinon	0.0625	0.0034	0.010	ug/l	0.0500	*ND*	125	36-153			

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Quality Control Results

(Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Matrix Spike (W3A1906-MS1)	**Source: 3A11195-01**				**Prepared: 01/24/23**	**Analyzed: 01/26/23**					
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.512*			*ug/l*	*0.500*		*102*	*50-141*			
Triphenyl phosphate	*1.40*			*ug/l*	*0.500*		*280*	*63-200*			*S-GC*
Matrix Spike Dup (W3A1906-MSD1)	**Source: 3A11195-01**				**Prepared: 01/24/23**	**Analyzed: 01/26/23**					
Chlorpyrifos	0.0932	0.0040	0.010	ug/l	0.0500	*ND*	186	37-168	17	30	MS-01
Diazinon	0.0714	0.0034	0.010	ug/l	0.0500	*ND*	143	36-153	13	30	
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.629*			*ug/l*	*0.500*		*126*	*50-141*			
Triphenyl phosphate	*1.55*			*ug/l*	*0.500*		*309*	*63-200*			*S-GC*

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Notes and Definitions

Item	Definition
MS-01	The spike recovery for this QC sample is outside of established control limits possibly due to sample matrix interference.
S-04	The surrogate recovery for this sample is outside of established control limits due to possible sample matrix effect.
S-GC	Surrogate recovery outside of control limits due to a possible matrix effect . The data was accepted based on valid recovery of the remaining surrogate.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Reviewed by:

Rahul R. Nair
Project Manager

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

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...nue, Suite 100
...92780
Phone: 714-895-5494

Chain of Custody Record

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California	
Address: 14859 E. Clark Avenue, ,	Due Date Requested: 2/1/2023		
City: City of Industry	TAT Requested (days):		
State, Zip: CA, 91745			
Phone:	PO #:		
Email:	WO #:		
Project Name: Boeing SSFL NPDES - Outfall 009 COMP	Project #: 44024446		
Site:	SSOW#:		

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units)) (Hold)
		Preservation Code:						
Outfall010_20230111_Comp (570-123653-1)	1/11/23	09:45 Pacific		Water			X	
Outfall010_20230111_Comp_Extra (570-123653-3)	1/11/23	09:45 Pacific		Water				X

Analysis Requested

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under cha maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accred attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are r
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:
Empty Kit Relinquished by: Date:	Time: Method of Shipment:

ICOC No:
570-203839

Containers

Count	Container Type	Preservative
4	Amber Glass 1 liter - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))	525.2- 24 hour extraction for Diazinon and Chlorpy package needed
3	SUBCONTRACT	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units)) (Hold)	525.2- 24 hour extraction for Diazinon and Chlorpy package needed

ORATORIES, INC.

Sample Receipt Checklist

Weck WKO: 3A11195 | Date/Time Received: 01/11/22 @ 17:39
Logged by: Jerico Bolotano | # of Samples: 02
Checked by: Jerico Bolotano | Delivered by: Client

sk	Yes	No	N/A	Comments
C present at receipt?	☒	☐		
C properly completed?	☒	☐		
C matches sample labels?	☒	☐		
	☐	☐		
oject Manager notified?	☐	☐	☒	
mple Temperature	4.3°C			
mples received on ice?	☒	☐		
Type (Blue/Wet)	Wet			
samples intact?	☒	☐		
mples in proper containers?	☒	☐		
fficient sample volume?	☒	☐		
mples intact?	☒	☐		
ceived within holding time?	☒	☐		
	☐	☐		
oject Manager notified?	☐	☐	☒	
mple labels checked for correct preservation?	☒	☐	☐	
C Headspace: (No) none, If Yes (See comment)	☐	☐	☒	☐ <6mm/Pea size?
4.2, 524.3, 624.1, 8260, 1666 P/T, LUFT				
verified upon receipt?				pH paper Lot# 2071882
etals <2; H2SO4 pres tests <2; 522<4; TOC <2; 525.2<2;	☐	☐	☒	
10B<2; 608.3 5-9				
ee Chlorine Tested <0.1	☒	☐	☐	Cl Test Strip Lot# 061221E
&G pH <2 verified?	☐	☐	☐	pH paper Lot#
				pH Reading:
adjusted for O&G	☐	☐	☐	Acid Lot#
				Amt added:
oject Manager notified?	☐	☐	☐	

123653

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address. Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Annual Outfall [003-007 009, 010] Outfall 010 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R/A: Total Recoverable Metals: (E200.7): Al, B, Fe, Ni, V Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	R: TCDD (and all congeners) (E1613B)	R/A: Cl-, F-, SO4, NO3+NO2-N, Perchlorate (E300)	R: TDS (SM2540C/E160.1)	A: TSS (160.2 (SM2540D))	R/A: Total Dissolved Metals (E200.7): Al, B, Fe, Ni, V Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	R: Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R: Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA *	R: Cyanide (SM4500-CN-E / E335.2)	A: Priority Pollutants-Pesticides+PCBs (E609)	R: Total Recoverable Metals: Mercury (E245.1)	R: Total Dissolved Metals: Mercury (E245.1)		Comments
Outfall 010	Outfall010_20230111_Comp	1/11/2023 0945	WM	500 mL Poly	1	HNO_3	85	No	X											X			
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	500 mL Poly	2	None	135	No			X												48 hours Holding Time NO3 & NO2
			WM	500 mL Poly	1	None	155	No				X											
			WM	1 L Poly	1	None	185	No					X										
			WM	500 mL Poly	1	NaOH	220	No										X					
			WM	2.5 Gal Cube	1	None	225	No							X								Unfiltered and unpreserved analysis. Separate RAD onto another workorder
			WM	1 L Glass Amber	1	None	230	No															Analyze duplicate, not MS/MSD.
			* WM	1 Gal Cube	8	None	235	No								X							Only test if first or second rain events of the year Deliver to ABC Labs in Ventura, CA
			WM	1 L Glass Amber	2	None	250	No											X				
	Outfall010_20230111_Comp_F	1/11/2023 0945	WM	1 L Poly	1	None	195	No						X									Filter and preserve w/in 24hrs of receipt at lab
			WM	borosilicate vials	1	None	320	No													X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall010_20230111_Comp_Extra	1/11/2023 0945	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	500 mL Poly	1	None	135	No			H												Hold
			WM	1 L Glass Amber	2	None	250	No											H				Hold

Legend A = Annual, R = Routine,

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	1/11/23 1400	H&A		1/11/23 1400 EC
	1/11/23 1910	EC		1/11/23 1910

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

* Hand-delivered to ABC Labs with copy of COC

2.3/2.3 1.9/1.9 1.7/17 SCL

570-123653 Chain of Custody

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2/16/2023

Rainy Season 2019-2020
Version 2

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Annual Outfall [003-007, 009, 010] Outfall 010 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED																	
									A	A	A	A	A													
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Priority Pollutants-SVOCs (E625)	Asbestos (EPA100.2) OF009 only	Chlorpyrifos, Diazinon (E526.2) Weck Labs in Hacienda Heights, CA	Cr (VI), Total (E218.6)														Comments
Outfall 010	Outfall010_20230111_Comp	1/11/2023 1045	WM	1 L Glass Amber	2	None	175	No	X																	
			WM	1L Poly	1	None	270	No		X																Only at Outfall 009
			WM	1 L Glass Amber	2	None	275	No			X															Extract within 24-Hours of sampling.
			WM	500 mL Poly	1	None	260	No				X														
	Outfall010_20230111_Comp_Extra	1/11/2023 1045	WM	1 L Glass Amber	2	None	175	No	H																	Hold
			WM	1 L Glass Amber	2	None HCl	275	No			H															Hold

Legend: A = Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	1/11/23 1400	H&A		1/11/23 1400 EC
	1/11/23 1910 EC			1/11/23 1910

Turn-around time: (Check)
24 Hour _____ 72 Hour _____ 10 Day ___X___
48 Hour _____ 5 Day _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s).	COC No: 570-203937 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123653-4
Address: 13715 Rider Trail North ,	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 009 COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actln Total Uranium	900.0/Evaporation Gross Alpha/Beta	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall010_20230111_Comp (570-123653-1)	1/11/23	09 45 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I II, III, IV Other (specify) Primary Deliverable Rank 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/12/23 1312				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-203964 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123653-2
Address: 880 Riverside Parkway,	Due Date Requested: 1/27/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 009 COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall010_20230111_Comp (570-123653-1)	1/11/23	09 45 Pacific		Water			X		2	See QAS, Boeing_w/u to zero Use Boeing glassware
Outfall010_20230111_Comp_Extra (570-123653-3)	1/11/23	09 45 Pacific		Water				X	2	See QAS Boeing_w/u to zero Use Boeing glassware

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	1/12/23 1419				
2						
3						

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123653-5

Login Number: 123653
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/3/2023 12:24:40 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 010 COMP

JOB NUMBER

570-123653-6

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization

Virendra R Patil

Generated
2/3/2023 12:24:40 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123653-6
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123653-6

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123653-6

Comments
No additional comments.

Receipt
The samples were received on 1/11/2023 7:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.3º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Chronic-Selenestrum: This method was subcontracted to Aquatic Bioassay & Consulting. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-6
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Method	Method Description	Protocol	Laboratory
EPA	Bioassay	EPA	Aquatic

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Aquatic = Aquatic Bioassay & Consulting, 29 North Olive Street, Ventura, CA 93001

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-6
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123653-1	Outfall010_20230111_Comp	Water	01/11/23 09:45	01/11/23 19:10

aquatic bioassay & consulting laboratories, inc

January 25, 2023

Mr. Virendra Patel
Eurofins Calscience
7440 Lincoln Way
Garden Grove, CA 92841-1432

Dear Mr. Patel:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA-821-R-02-013.* Results were as follows:

CLIENT:	Eurofins Calscience
SAMPLE I.D.:	Outfall010_20230111_Comp
DATE RECEIVED:	11 Jan - 2023
ABC LAB. NO.:	CSE0123.068

CHRONIC SELENASTRUM ALGAE GROWTH BIOASSAY

IWC = 100.00 %

TST RESULT

GROWTH = PASS % EFFECT = -64.79 %

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 20 Jan-23 16:18 (p 1 of 1)
Test Code/ID: CSE0123.068 / 02-2868-3809

Selenastrum Growth Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	20-9021-1438	Test Type:	Cell Growth	Analyst:	
Start Date:	12 Jan-23 13:17	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	16 Jan-23 11:50	Species:	Selenastrum capricornutum	Brine:	Not Applicable
Test Length:	95h	Taxon:	Chlorophyta	Source:	Aquatic Biosystems, CO Age: 7d
Sample ID:	07-7678-1901	Code:	CSE0123.068	Project:	Boeing-SSFL NPDES
Sample Date:	11 Jan-23 09:45	Material:	Sample Water	Source:	Bioassay Report
Receipt Date:	11 Jan-23 14:25	CAS (PC):		Station:	Outfall010_20230111_Comp
Sample Age:	28h (3 °C)	Client:	Eurofins Calscience		

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
07-8495-1693	Cell Density	TST-Welch's t Test	<1.0E-05	100% passed cell density	1

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
07-8495-1693	Cell Density	Control CV	0.06034	<<	0.2	Yes	Passes Criteria
07-8495-1693	Cell Density	Control Resp	1.14E+6	1.00E+6	<<	Yes	Passes Criteria

Cell Density Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	8	1.136E+6	1.079E+6	1.194E+6	1.033E+6	1.214E+6	2.424E+4	6.857E+4	6.03%	0.00%
100		8	1.873E+6	1.725E+6	2.021E+6	1.631E+6	2.076E+6	6.274E+4	1.775E+5	9.48%	-64.79%

Cell Density Detail — MD5: 0C11F7F66641646369544BDD06251C7A

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
0	N	1.195E+6	1.033E+6	1.044E+6	1.105E+6	1.214E+6	1.158E+6	1.159E+6	1.184E+6
100		1.836E+6	1.657E+6	2.041E+6	2.076E+6	1.631E+6	1.758E+6	1.954E+6	2.030E+6

CETIS Analytical Report

Selenastrum Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	07-8495-1693	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	20 Jan-23 16:17	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	20 Jan-23 16:15	**MD5 Hash:**	E7DD76612473128E39BD9AD36FF67926	**Editor ID:**	009-702-627-3
Batch ID:	20-9021-1438	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	12 Jan-23 13:17	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	16 Jan-23 11:50	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Test Length:	95h	**Taxon:**	Chlorophyta	**Source:**	Aquatic Biosystems, CO **Age:** 7d
Sample ID:	07-7678-1901	**Code:**	CSE0123.068	**Project:**	Boeing-SSFL NPDES
Sample Date:	11 Jan-23 09:45	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	11 Jan-23 14:25	**CAS (PC):**		**Station:**	Outfall010_20230111_Comp
Sample Age:	28h (3 °C)	**Client:**	Eurofins Calscience		

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	100% passed cell density endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(α:25%)
Negative Control		100*	8	15.62	0.7064	CDF	<1.0E-05	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.06034	<<	0.2	Yes	Passes Criteria
Control Resp	1.14E+6	1.00E+6	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	2.169E+12	2.169E+12	1	119.8	<1.0E-05	Significant Effect
Error	2.534E+11	1.81E+10	14			
Total	2.422E+12		15			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Levene Equality of Variance Test	12.23	8.862	0.0036	Unequal Variances
	Mod Levene Equality of Variance Test	10.51	8.862	0.0059	Unequal Variances
	Variance Ratio F Test	6.698	8.885	0.0226	Equal Variances
Distribution	Anderson-Darling A2 Test	0.2473	3.878	0.7799	Normal Distribution
	D'Agostino Skewness Test	0.6062	2.576	0.5444	Normal Distribution
	Kolmogorov-Smirnov D Test	0.1282	0.2471	0.7608	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9656	0.8408	0.7630	Normal Distribution

Cell Density Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	8	1.136E+6	1.079E+6	1.194E+6	1.158E+6	1.033E+6	1.214E+6	2.424E+4	6.03%	0.00%
100		8	1.873E+6	1.725E+6	2.021E+6	1.895E+6	1.631E+6	2.076E+6	6.274E+4	9.48%	-64.79%

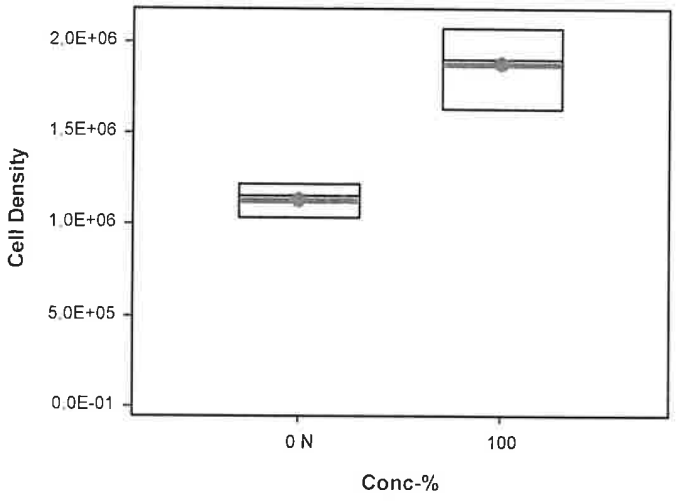
Cell Density Detail

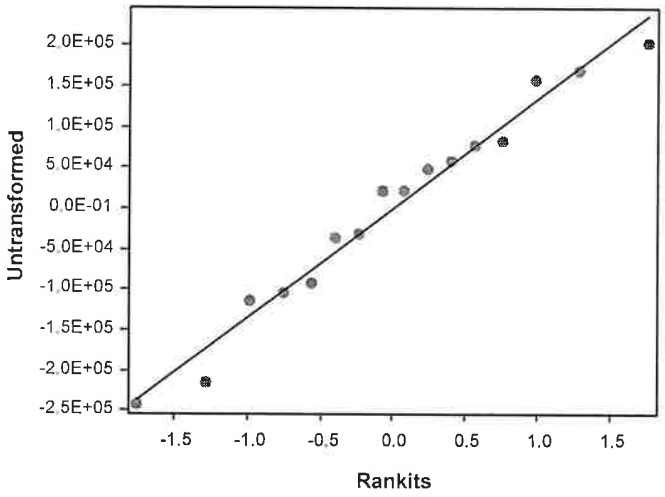
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
0	N	1.195E+6	1.033E+6	1.044E+6	1.105E+6	1.214E+6	1.158E+6	1.159E+6	1.184E+6
100		1.836E+6	1.657E+6	2.041E+6	2.076E+6	1.631E+6	1.758E+6	1.954E+6	2.030E+6

Selenastrum Growth Test
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	07-8495-1693	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	20 Jan-23 16:17	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	20 Jan-23 16:15	**MD5 Hash:**	E7DD76612473128E39BD9AD36FF67926	**Editor ID:**	009-702-627-3

Graphics





CETIS Measurement Report

Selenastrum Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	20-9021-1438	**Test Type:**	Cell Growth	**Analyst:**		
Start Date:	12 Jan-23 13:17	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water	
Ending Date:	16 Jan-23 11:50	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable	
Test Length:	95h	**Taxon:**	Chlorophyta	**Source:**	Aquatic Biosystems, CO	**Age:** 7d
Sample ID:	07-7678-1901	**Code:**	CSE0123.068	**Project:**	Boeing-SSFL NPDES	
Sample Date:	11 Jan-23 09:45	**Material:**	Sample Water	**Source:**	Bioassay Report	
Receipt Date:	11 Jan-23 14:25	**CAS (PC):**		**Station:**	Outfall010_20230111_Comp	
Sample Age:	28h (3 °C)	**Client:**	Eurofins Calscience			

Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	1	77	---	---	77	77	---	---	---	0
100		1	78	---	---	78	78	---	---	---	0
Overall		2	77.5	71.15	83.85	77	78	0.5	0.7071	0.91%	0 (0%)

Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	497.6	487.7	507.5	489	510	1.591	7.956	1.60%	0
100		5	309.8	301.5	318.1	304	321	1.33	6.648	2.15%	0
Overall		10	403.7	332.7	474.7	304	510	31.38	99.22	24.58%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	1	118	---	---	118	118	---	---	---	0
100		1	86	---	---	86	86	---	---	---	0
Overall		2	102	-101.3	305.3	86	118	16	22.63	22.18%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	7.96	7.849	8.071	7.8	8	0.01789	0.08944	1.12%	0
100		5	7.88	7.824	7.936	7.8	7.9	0.008941	0.04471	0.57%	0
Overall		10	7.92	7.864	7.976	7.8	8	0.02494	0.07888	1.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
100		5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
Overall		10	25.28	25.13	25.43	25	25.5	0.06464	0.2044	0.81%	0 (0%)

.068

Temp. deg. C = 3.0 °C

Chlorine (mg/L) = <0.1

NO3 (mg/L) = <0.1

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

2/3/2023

Client Name/Address:
Haley & Aldrich
5333 Mission Center Rd Suite 300
San Diego, CA 92108

Eurofins Calscience Irvine Contact: Christian Bondoc
17461 Derian Ave Suite #100
Irvine CA 92614
Tel: 949-260-3218

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2015-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Sampler: Adrian Mobeka

Project:
Boeing-SSFL NPDES
Permit 2023
Annual Outfall [003-007, 009, 010]
Outfall 010
Comp

Project Manager: Katherine Miller
520.289.8606, 520.904.6944 (cell)

Field Manager: Mark Dominick
978.234.5033, 818.599.0702 (cell)

ANALYSIS REQUIRED

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.7): Al, B, Fe, Ni, V, Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl (R/A)	TCDD (and all congeners) (E1613B) (R)	Cl-, F-, SO4, NO3+NO2-N, Perchlorate (E300) (R/A)	TDS (SM2540C/E160.1) (R)	TSS (160.2 (SM2540D)) (A)	Total Dissolved Metals : (E200.7): Al, B, Fe, Ni, V, Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl (R/A)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1) (R)	Chronic Toxicity - Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA (R)	Cyanide (SM 4500-CN-E / E335.2) (R)	Priority Pollutants-Pesticides-PCBs (E608) (R)	Total Recoverable Metals: Mercury (E245.1) (R)	Total Dissolved Metals: Mercury (E245.1) (R)		Comments
Outfall 010	Outfall010_20230111_Comp	1/11/2023 1545	WM	500 mL Poly	1	HNO_3	85	No	X											X				
			WM	1 L Glass Amber	2	None	110	No		X														
			WM	500 mL Poly	2	None	135	No			X													48 hours Holding Time NO3 & NO2
			WM	500 mL Poly	1	None	160	No				X												
			WM	1 L Poly	1	None	165	No					X											
			WM	500 mL Poly	1	NaOH	220	No										X						
			WM	2.5 Gal Cube	1	None	225	No									X							Unfiltered and unpreserved analysis. Separate RAD into another workorder. Analyze duplicate, not MS/MSD.
			WM	1 L Glass Amber	1	None	230	No																
			WM	1 Gal Cube	6	None	235	No										X						Only last if first or second rain events of the year. Deliver to ABC Labs in Ventura, CA
			WM	1 L Glass Amber	2	None	250	No												X				
	Outfall010_20230111_Comp_F	1/11/2023 1545	WM	1 L Poly	1	None	195	No						X										Filter and preserve w/in 24hrs of receipt at lab
			WM	borosilicate vials	1	None	320	No														X		Samples received DO NOT OPEN VIAL. Bag to be opened in Mercury Prep using clean procedures
	Outfall010_20230111_Comp_Extra	1/11/2023 1545	WM	1 L Glass Amber	2	None	110	No		H														Hold
			WM	500 mL Poly	2	None	135	No			H													Hold
			WM	1 L Glass Amber	2	None	250	No												H				Hold

Legend: A = Annual, R = Routine,

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-11-2023/1425	H:A	[signature]	1.11.23 1425
Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: ____ 72 Hour: ____ 10 Day: __X__
48 Hour: ____ 5 Day: ____ Normal: ____

Sample Integrity: (Check)
Intact: ____ On Ice: ____
Store samples for 6 months
Data Requirements: (Check)
No Level IV: ____ All Level IV: __X__

* Hand-delivered to ABC Labs with copy of COC

aquatic bioassay & consulting laboratories, inc

CHRONIC SELENASTRUM GROWTH BIOASSAY

DATE: 12 January - 2023

STANDARD TOXICANT: Cadmium Chloride

NOEC = 20.00 ug/l

IC25 = 53.36 ug/l
IC50 = 102.30 ug/l

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 20 Jan-23 16:52 (p 1 of 1)
Test Code/ID: SEL011223 / 04-7405-9726

Selenastrum Growth Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	19-4179-0418	Test Type:	Cell Growth	Analyst:			
Start Date:	12 Jan-23 13:24	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water		
Ending Date:	16 Jan-23 13:10	Species:	Selenastrum capricornutum	Brine:	Not Applicable		
Test Length:	96h	Taxon:	Chlorophyta	Source:	Aquatic Biosystems, CO	Age:	7d
Sample ID:	01-0315-3386	Code:	SEL011223	Project:	REF TOX		
Sample Date:	12 Jan-23 13:24	Material:	Cadmium chloride	Source:	Reference Toxicant		
Receipt Date:		CAS (PC):		Station:	REF TOX		
Sample Age:	---	Client:	Internal Lab				

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	S
02-3719-8182	Cell Density	Dunnett Multiple Comparison Test		20	40	28.28	4.66%	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓	Level	µg/L	95% LCL	95% UCL	S
05-1997-3179	Cell Density	Linear Interpolation (ICPIN)		IC15	34.55	31.57	37.91	1
				IC20	39.4	35.65	48.58	
				IC25	53.36	40.71	62.3	
				IC40	88.59	84.67	92.36	
				IC50	102.3	99.22	105.6	

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
02-3719-8182	Cell Density	Control CV	0.03087	<<	0.2	Yes	Passes Criteria
05-1997-3179	Cell Density	Control CV	0.03087	<<	0.2	Yes	Passes Criteria
02-3719-8182	Cell Density	Control Resp	1.06E+6	1.00E+6	<<	Yes	Passes Criteria
05-1997-3179	Cell Density	Control Resp	1.06E+6	1.00E+6	<<	Yes	Passes Criteria

Cell Density Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	4	1.057E+6	1.005E+6	1.109E+6	1.033E+6	1.105E+6	1.631E+4	3.262E+4	3.09%	0.00%
20		4	1.091E+6	1.026E+6	1.156E+6	1.040E+6	1.131E+6	2.040E+4	4.080E+4	3.74%	-3.26%
40		4	8.525E+5	8.034E+5	9.016E+5	8.250E+5	8.890E+5	1.541E+4	3.083E+4	3.62%	19.33%
80		4	7.118E+5	6.788E+5	7.447E+5	6.940E+5	7.330E+5	1.035E+4	2.069E+4	2.91%	32.65%
140		4	2.412E+5	1.995E+5	2.830E+5	2.190E+5	2.790E+5	1.312E+4	2.623E+4	10.87%	77.17%
180		4	1.472E+5	1.228E+5	1.717E+5	1.320E+5	1.610E+5	7.696E+3	1.539E+4	10.45%	86.07%

Cell Density Detail

MD5: 8002C18F242E2CF77D044A91E3CE4461

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.045E+6	1.033E+6	1.044E+6	1.105E+6
20		1.131E+6	1.078E+6	1.116E+6	1.040E+6
40		8.670E+5	8.290E+5	8.250E+5	8.890E+5
80		6.940E+5	7.330E+5	6.940E+5	7.260E+5
140		2.190E+5	2.370E+5	2.300E+5	2.790E+5
180		1.360E+5	1.610E+5	1.600E+5	1.320E+5

CETIS Analytical Report

Report Date: 20 Jan-23 16:52 (p 1 of 2)
Test Code/ID: SEL011223 / 04-7405-9726

Selenastrum Growth Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	02-3719-8182	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	20 Jan-23 16:51	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Edit Date:	20 Jan-23 16:48	**MD5 Hash:**	8002C18F242E2CF77D044A91E3CE4461	**Editor ID:**	009-702-627-3
Batch ID:	19-4179-0418	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	12 Jan-23 13:24	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	16 Jan-23 13:10	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Test Length:	96h	**Taxon:**	Chlorophyta	**Source:**	Aquatic Biosystems, CO **Age:** 7d
Sample ID:	01-0315-3386	**Code:**	SEL011223	**Project:**	REF TOX
Sample Date:	12 Jan-23 13:24	**Material:**	Cadmium chloride	**Source:**	Reference Toxicant
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	Internal Lab		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Untransformed	C > T	20	40	28.28	---	49300	4.66%

Dunnett Multiple Comparison Test

Control	vs	Conc-µg/L	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(α:5%)
Negative Control		20	6	-1.685	2.407	49300	CDF	0.9976	Non-Significant Effect
		40*	6	9.973	2.407	49300	CDF	2.7E-05	Significant Effect
		80*	6	16.85	2.407	49300	CDF	2.7E-05	Significant Effect
		140*	6	39.82	2.407	49300	CDF	2.7E-05	Significant Effect
		180*	6	44.41	2.407	49300	CDF	2.7E-05	Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.03087	<<	0.2	Yes	Passes Criteria
Control Resp	1.06E+6	1.00E+6	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	3.272E+12	6.545E+11	5	780.2	<1.0E-05	Significant Effect
Error	1.51E+10	838820000	18			
Total	3.287E+12		23			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	2.884	15.09	0.7178	Equal Variances
	Levene Equality of Variance Test	1.242	4.248	0.3306	Equal Variances
	Mod Levene Equality of Variance Test	0.6992	4.248	0.6311	Equal Variances
Distribution	Anderson-Darling A2 Test	0.7994	3.878	0.0381	Normal Distribution
	D'Agostino Kurtosis Test	0.7357	2.576	0.4619	Normal Distribution
	D'Agostino Skewness Test	0.6079	2.576	0.5433	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	0.9108	9.21	0.6342	Normal Distribution
	Kolmogorov-Smirnov D Test	0.2114	0.2056	0.0070	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.9401	0.884	0.1636	Normal Distribution

Cell Density Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	1.057E+6	1.005E+6	1.109E+6	1.044E+6	1.033E+6	1.105E+6	1.631E+4	3.09%	0.00%
20		4	1.091E+6	1.026E+6	1.156E+6	1.097E+6	1.040E+6	1.131E+6	2.040E+4	3.74%	-3.26%
40		4	8.525E+5	8.034E+5	9.016E+5	8.480E+5	8.250E+5	8.890E+5	1.541E+4	3.62%	19.33%
80		4	7.118E+5	6.788E+5	7.447E+5	7.047E+5	6.940E+5	7.330E+5	1.035E+4	2.91%	32.65%
140		4	2.412E+5	1.995E+5	2.830E+5	2.335E+5	2.190E+5	2.790E+5	1.312E+4	10.87%	77.17%
180		4	1.472E+5	1.228E+5	1.717E+5	1.480E+5	1.320E+5	1.610E+5	7.696E+3	10.45%	86.07%

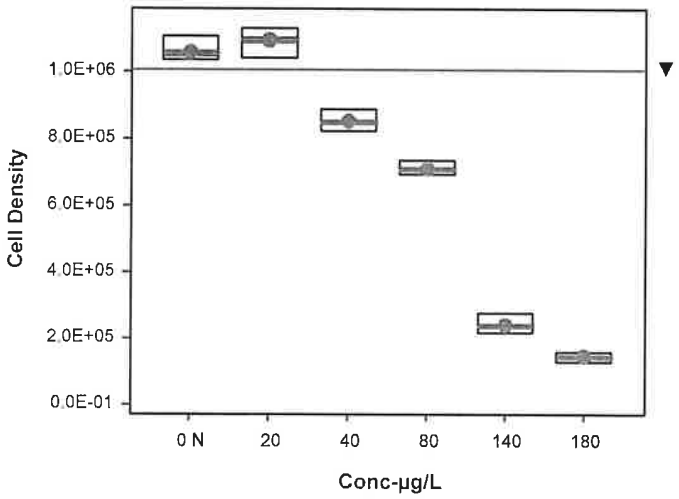
Selenastrum Growth Test
Aquatic Bioassay & Consulting Labs, Inc.

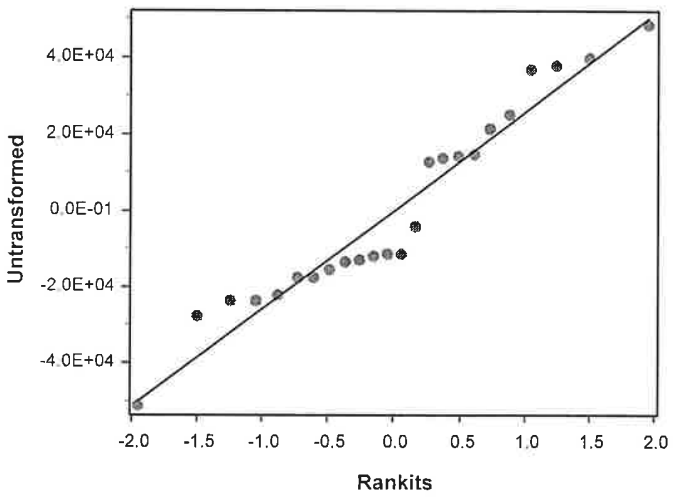
Analysis ID:	02-3719-8182	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	20 Jan-23 16:51	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Edit Date:	20 Jan-23 16:48	**MD5 Hash:**	8002C18F242E2CF77D044A91E3CE4461	**Editor ID:**	009-702-627-3

Cell Density Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.045E+6	1.033E+6	1.044E+6	1.105E+6
20		1.131E+6	1.078E+6	1.116E+6	1.040E+6
40		8.670E+5	8.290E+5	8.250E+5	8.890E+5
80		6.940E+5	7.330E+5	6.940E+5	7.260E+5
140		2.190E+5	2.370E+5	2.300E+5	2.790E+5
180		1.360E+5	1.610E+5	1.600E+5	1.320E+5

Graphics





CETIS Analytical Report

Selenastrum Growth Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	05-1997-3179	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	20 Jan-23 16:51	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	20 Jan-23 16:48	**MD5 Hash:**	8002C18F242E2CF77D044A91E3CE4461	**Editor ID:**	009-702-627-3
Batch ID:	19-4179-0418	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	12 Jan-23 13:24	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	16 Jan-23 13:10	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Test Length:	96h	**Taxon:**	Chlorophyta	**Source:**	Aquatic Biosystems, CO **Age:** 7d
Sample ID:	01-0315-3386	**Code:**	SEL011223	**Project:**	REF TOX
Sample Date:	12 Jan-23 13:24	**Material:**	Cadmium chloride	**Source:**	Reference Toxicant
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	Internal Lab		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control CV	0.03087	<<	0.2	Yes	Passes Criteria
Control Resp	1.06E+6	1.00E+6	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
IC15	34.55	31.57	37.91
IC20	39.4	35.65	48.58
IC25	53.36	40.71	62.3
IC40	88.59	84.67	92.36
IC50	102.3	99.22	105.6

Cell Density Summary

			Calculated Variate						Isotonic Variate	
Conc-µg/L	**Code**	**Count**	**Mean**	**Median**	**Min**	**Max**	**CV%**	**%Effect**	**Mean**	**%Effect**
0	N	4	1.057E+6	1.044E+6	1.033E+6	1.105E+6	3.09%	0.00%	1.074E+6	0.00%
20		4	1.091E+6	1.097E+6	1.040E+6	1.131E+6	3.74%	-3.26%	1.074E+6	0.00%
40		4	8.525E+5	8.480E+5	8.250E+5	8.890E+5	3.62%	19.33%	8.525E+5	20.62%
80		4	7.118E+5	7.047E+5	6.940E+5	7.330E+5	2.91%	32.65%	7.118E+5	33.72%
140		4	2.412E+5	2.335E+5	2.190E+5	2.790E+5	10.87%	77.17%	2.412E+5	77.54%
180		4	1.472E+5	1.480E+5	1.320E+5	1.610E+5	10.45%	86.07%	1.472E+5	86.29%

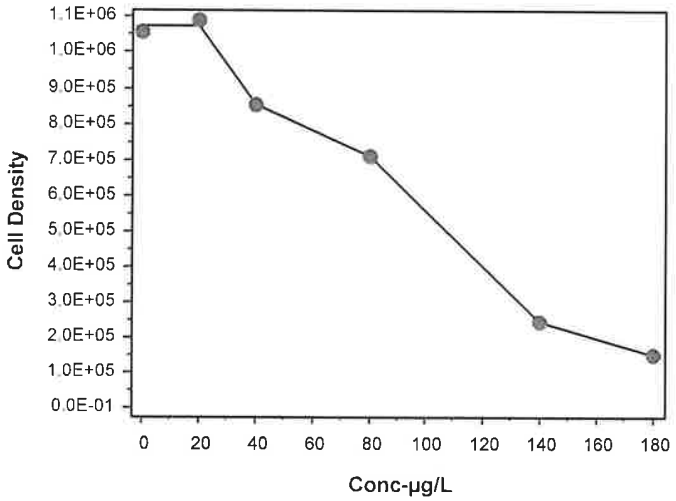
Cell Density Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.045E+6	1.033E+6	1.044E+6	1.105E+6
20		1.131E+6	1.078E+6	1.116E+6	1.040E+6
40		8.670E+5	8.290E+5	8.250E+5	8.890E+5
80		6.940E+5	7.330E+5	6.940E+5	7.260E+5
140		2.190E+5	2.370E+5	2.300E+5	2.790E+5
180		1.360E+5	1.610E+5	1.600E+5	1.320E+5

Selenastrum Growth Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	05-1997-3179	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	20 Jan-23 16:51	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	20 Jan-23 16:48	**MD5 Hash:**	8002C18F242E2CF77D044A91E3CE4461	**Editor ID:**	009-702-627-3

Graphics



CETIS Measurement Report

Selenastrum Growth Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	19-4179-0418	**Test Type:**	Cell Growth	**Analyst:**		
Start Date:	12 Jan-23 13:24	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water	
Ending Date:	16 Jan-23 13:10	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable	
Test Length:	96h	**Taxon:**	Chlorophyta	**Source:**	Aquatic Biosystems, CO	**Age:** 7d
Sample ID:	01-0315-3386	**Code:**	SEL011223	**Project:**	REF TOX	
Sample Date:	12 Jan-23 13:24	**Material:**	Cadmium chloride	**Source:**	Reference Toxicant	
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX	
Sample Age:	---	**Client:**	Internal Lab			

Alkalinity (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	1	77	---	---	77	77	---	---	---	0
20		1	80	---	---	80	80	---	---	---	0
40		1	77	---	---	77	77	---	---	---	0
80		1	68	---	---	68	68	---	---	---	0
140		1	66	---	---	66	66	---	---	---	0
180		1	65	---	---	65	65	---	---	---	0
Overall		6	72.17	65.29	79.05	65	80	2.676	6.555	9.08%	0 (0%)

Conductivity-µmhos

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	497.6	487.7	507.5	489	510	1.591	7.956	1.60%	0
20		5	489.2	474.1	504.3	468	499	2.439	12.19	2.49%	0
40		5	453.6	434.3	472.9	445	481	3.104	15.52	3.42%	0
80		5	432.4	417.2	447.6	425	454	2.452	12.26	2.84%	0
140		5	407.8	390.9	424.7	400	432	2.722	13.61	3.34%	0
180		5	390.4	369.6	411.2	379	420	3.348	16.74	4.29%	0
Overall		30	445.2	429.5	460.8	379	510	7.646	41.88	9.41%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	1	118	---	---	118	118	---	---	---	0
20		1	110	---	---	110	110	---	---	---	0
40		1	125	---	---	125	125	---	---	---	0
80		1	95	---	---	95	95	---	---	---	0
140		1	98	---	---	98	98	---	---	---	0
180		1	93	---	---	93	93	---	---	---	0
Overall		6	106.5	92.63	120.4	93	125	5.396	13.22	12.41%	0 (0%)

pH-Units

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	7.96	7.849	8.071	7.8	8	0.01789	0.08944	1.12%	0
20		5	8	8	8	8	8	0	0	0.00%	0
40		5	8	8	8	8	8	0	0	0.00%	0
80		5	8	8	8	8	8	0	0	0.00%	0
140		5	7.98	7.924	8.036	7.9	8	0.008943	0.04472	0.56%	0
180		5	7.98	7.924	8.036	7.9	8	0.008943	0.04472	0.56%	0
Overall		30	7.987	7.97	8.003	7.8	8	0.007927	0.04342	0.54%	0 (0%)

Temperature-°C

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
20		5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
40		5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
80		5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
140		5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
180		5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
Overall		30	25.28	25.21	25.35	25	25.5	0.03601	0.1972	0.78%	0 (0%)

123653

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address. Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Annual Outfall [003-007 009, 010] Outfall 010 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R/A Total Recoverable Metals: (E200.7): Al, B, Fe, Ni, V Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	R TCDD (and all congeners) (E1613B)	R/A Cl-, F-, SO4, NO3+NO2-N, Perchlorate (E300)	R TDS (SM2540C/E160.1)	A TSS (160.2 (SM2540D))	R/A Total Dissolved Metals (E200.7): Al, B, Fe, Ni, V Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	R Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA *	R Cyanide (SM4500-CN-E / E335.2)	A Priority Pollutants-Pesticides+PCBs (E609)	R Total Recoverable Metals: Mercury (E245.1)	R Total Dissolved Metals: Mercury (E245.1)		Comments
Outfall 010	Outfall010_20230111_Comp	1/11/2023 0945	WM	500 mL Poly	1	HNO_3	85	No	X											X			
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	500 mL Poly	2	None	135	No			X												48 hours Holding Time NO3 & NO2
			WM	500 mL Poly	1	None	155	No				X											
			WM	1 L Poly	1	None	185	No					X										
			WM	500 mL Poly	1	NaOH	220	No										X					
			WM	2.5 Gal Cube	1	None	225	No							X								Unfiltered and unpreserved analysis. Separate RAD onto another workorder
			WM	1 L Glass Amber	1	None	230	No															Analyze duplicate, not MS/MSD.
			* WM	1 Gal Cube	8	None	235	No								X							Only test if first or second rain events of the year Deliver to ABC Labs in Ventura, CA
			WM	1 L Glass Amber	2	None	250	No											X				
	Outfall010_20230111_Comp_F	1/11/2023 0945	WM	1 L Poly	1	None	195	No						X									Filter and preserve w/in 24hrs of receipt at lab
			WM	borosilicate vials	1	None	320	No													X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall010_20230111_Comp_Extra	1/11/2023 0945	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	500 mL Poly	2	None	135	No			H												Hold
			WM	1 L Glass Amber	2	None	250	No											H				Hold

Legend A = Annual, R = Routine,

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	1/11/23 1400	H&A		1/11/23 1400 EC
	1/11/23 1910	EC		1/11/23 1910

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

* Hand-delivered to ABC Labs with copy of COC

2.3/2.3 1.9/1.9 1.7/17 SCI

570-123653 Chain of Custody

Page 22 of 26

2/3/2023

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Annual Outfall [003-007, 009, 010] Outfall 010 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED																		
									A	A	A	A	A														
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Priority Pollutants-SVOCs (E625)	Asbestos (EPA100.2) OF009 only	Chlorpyrifos, Diazinon (E526.2) Weck Labs in Hacienda Heights, CA	Cr (VI), Total (E218.6)															Comments
Outfall 010	Outfall010_20230111_Comp	1/11/2023 1045	WM	1 L Glass Amber	2	None	175	No	X																		
			WM	1L Poly	1	None	270	No		X																	Only at Outfall 009
			WM	1 L Glass Amber	2	None	275	No			X																Extract within 24-Hours of sampling.
			WM	500 mL Poly	1	None	260	No				X															
	Outfall010_20230111_Comp_Extra	1/11/2023 1045	WM	1 L Glass Amber	2	None	175	No	H																		Hold
			WM	1 L Glass Amber	2	None HCl	275	No			H																Hold

Legend: A = Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	1/11/23 1400	H&A		1/11/23 1400 EC
	1/11/23 1910 EC			1/11/23 1910

Turn-around time: (Check)
24 Hour _____ 72 Hour _____ 10 Day ___X___
48 Hour _____ 5 Day _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s).	COC No: 570-203937 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123653-4
Address: 13715 Rider Trail North ,	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045	PO #:			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	WO #:			
Email:	Project #: 44024446			
Project Name: Boeing SSFL NPDES - Outfall 009 COMP	SSOW#:			
Site:				

Analysis Requested

Preservation Codes

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actln Total Uranium	900 0/Evaporation Gross Alpha/Beta	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall010_20230111_Comp (570-123653-1)	1/11/23	09 45 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV Other (specify) Primary Deliverable Rank 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/12/23 1312	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-203964 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123653-2
Address: 880 Riverside Parkway,	Due Date Requested: 1/27/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 009 COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall010_20230111_Comp (570-123653-1)	1/11/23	09 45 Pacific		Water			X		2	See QAS, Boeing_w/u to zero Use Boeing glassware
Outfall010_20230111_Comp_Extra (570-123653-3)	1/11/23	09 45 Pacific		Water				X	2	See QAS Boeing_w/u to zero Use Boeing glassware

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/12/23 1419				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123653-6

Login Number: 123653
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/11/2023 4:40:28 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 010 COMP

JOB NUMBER

570-123653-7

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

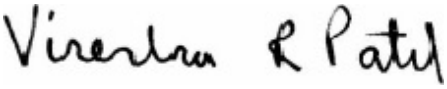
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123653-7
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc. Job ID: 570-123653-7
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Job ID: 570-123653-7

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123653-7

Comments
No additional comments.

Receipt
The samples were received on 1/11/2023 7:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.3º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method EPA 608.3 Low Level - Endrin Aldehyde only (ug/L units) - MDL(J): This method was subcontracted to Weck Laboratories, Inc.. The subcontract laboratory certification is different from that of the facility issuing the final report.

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123653-7
Project/Site: Boeing SSFL NPDES - Outfall 010 COMP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123653-3	Outfall010_20230111_Comp_Extra	Water	01/11/23 09:45	01/11/23 19:10

WECK LABORATORIES, INC.

Certificate of Analysis

FINAL REPORT

Work Orders: 3B02104

Project: 570-123653-7

Attn: Virendra Patel

Client: Eurofins Calscience - Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Report Date: 3/09/2023
Received Date: 2/2/2023
Turnaround Time: Normal
Phones: (949) 261-1022
Fax: (949) 260-3297
P.O. #:
Billing Code:

Dear Virendra Patel,

Enclosed are the results of analyses for samples received 2/02/23 with the Chain-of-Custody document. The samples were received in good condition, at 1.9 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: Outfall010_20230111_Comp_Extra (570-123653-3) Sampled: 01/11/23 9:45 by Client
3B02104-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 608.3			**Instr:** GC07				
Batch ID: W3B0399 **Preparation:** EPA 608/L-L SF			**Prepared:** 02/06/23 08:21				**Analyst:** RJG
Endrin aldehyde	ND	0.0019	0.0050	ug/l	1	02/15/23	O-09
Surrogate(s)							
Decachlorobiphenyl	*61%*		*33-133*	*Conc: 0.0579*		*02/15/23*	
Tetrachloro-meta-xylene	*57%*		*32-130*	*Conc: 0.0544*		*02/15/23*	

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

Quality Control Results

Chlorinated Pesticides and/or PCBs by GC/ECD

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3B0399-BLK1)					**Prepared: 02/06/23**	**Analyzed: 02/15/23**					
Endrin aldehyde	ND	0.0019	0.0050	ug/l							
Surrogate(s)											
Decachlorobiphenyl	*0.0675*			*ug/l*	*0.100*		*67*	*33-133*			
Tetrachloro-meta-xylene	*0.0595*			*ug/l*	*0.100*		*59*	*32-130*			
LCS (W3B0399-BS1)					**Prepared: 02/06/23**	**Analyzed: 02/15/23**					
Endrin aldehyde	0.0684	0.0019	0.0050	ug/l	0.100		68	18-130			
Surrogate(s)											
Decachlorobiphenyl	*0.0735*			*ug/l*	*0.100*		*74*	*33-133*			
Tetrachloro-meta-xylene	*0.0583*			*ug/l*	*0.100*		*58*	*32-130*			
LCS Dup (W3B0399-BSD1)					**Prepared: 02/06/23**	**Analyzed: 02/15/23**					
Endrin aldehyde	0.0791	0.0019	0.0050	ug/l	0.100		79	18-130	15	30	
Surrogate(s)											
Decachlorobiphenyl	*0.0808*			*ug/l*	*0.100*		*81*	*33-133*			
Tetrachloro-meta-xylene	*0.0731*			*ug/l*	*0.100*		*73*	*32-130*			

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634

www.wecklabs.com

Notes and Definitions

Item	Definition
O-09	This sample was received with the EPA recommended holding time expired.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Reviewed by:

Tiffany T. Felix For Rahul R. Nair
Project Manager

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

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www.wecklabs.com

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

3B0214

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California	
Address: 14859 East Clark Avenue, ,	Due Date Requested: 2/22/2023	Analysis Requested	
City: City of Industry	TAT Requested (days):		
State, Zip: CA, 917451396			
Phone:	PO #:		
Email:	WO #:		
Project Name: Boeing SSFL NPDES - Outfall 009 COMP	Project #: 44024446		
Site:	SSOW#:		

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (EPA 608.3 Low Level - Endrin Aldehyde only (ug/L units) - MDL(J))
			Preservation Code:				
Outfall010_20230111_Comp_Extra (570-123653-3)	1/11/23	09:45 Pacific		Water			X

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under cha maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accred attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are re*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time:	Company	Received by: Date/Time:

3/11/2023

3B0

ICOC No:
570-206007

Containers

Count	Container Type	Preservative
2	Amber Glass 1 liter - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
3	SUBCONTRACT	SUB (EPA 608.3 Low Level - Endrin Aldehyde only (ug/L units) - MDL(J))	Level IV, EQUIS 5C, MDL reporting w/J flag. Pe ug/L

COC	COC matches sample labels?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Receipt Information	Sample Temperature	1.9°C			
	Samples received on ice?	☒	☐		
	Ice Type (Blue/Wet)	WET			
	All samples intact?	☒	☐		
	Samples in proper containers?	☒	☐		
	Sufficient sample volume?	☒	☐		
	Samples intact?	☒	☐		
	Received within holding time?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Sample Preservation Verification?	Sample labels checked for correct preservation?	☒	☐	☐	
	VOC Headspace: (No) none, If Yes (See comment) 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☐	☒	☐ <6m
	pH verified upon receipt? Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 525.2<2; 6710B<2; 608.3 5-9	☐	☐	☒	pH paper Lot# 2
	Free Chlorine Tested <0.1	☒	☐	☐	Cl Test Strip Lot
	O&G pH <2 verified?	☐	☐	☐	pH paper Lot#
	pH adjusted for O&G	☐	☐	☐	pH Reading: Acid Lot# Amt added:
	Project Manager notified?	☐	☐	☒	

08

PM Comments

Sample Receipt Checklist Prepared by:

Signature: *Lester Abad* Date: 02/02/23

123653

Error on COC, please add Arsenic and Beryllium for total and dissolved metals
K. Rapp 1/24/23

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Annual Outfall [003-007 009, 010] Outfall 010 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	Project Manager: Katherine Miller 520.289.8606; 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.7): Al, B, Fe, Ni, V, Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	TCDD (and all congeners) (E1613B)	Cl-, F-, SO4, NO3+NO2-N, Perchlorate (E300)	TDS (SM2540C/E160.1)	TSS (160.2 (SM2540D))	Total Dissolved Metals (E200.7): Al, B, Fe, Ni, V, Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA	Cyanide (SM4500-CN-E / E335.2)	Priority Pollutants-Pesticides+PCBs (E608)	Total Recoverable Metals: Mercury (E245.1)	Total Dissolved Metals: Mercury (E245.1)		Comments
									R/A	R	R/A	R	A	R/A	R	R	R	A	R	R		
									ANALYSIS REQUIRED													
Outfall 010	Outfall010_20230111_Comp	1/11/2023 1545	WM	500 mL Poly	1	HNO_3	85	No	X											X			
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	500 mL Poly	2	None	135	No			X												48 hours Holding Time NO3 & NO2
			WM	500 mL Poly	1	None	155	No				X											
			WM	1 L Poly	1	None	185	No					X										
			WM	500 mL Poly	1	NaOH	220	No										X					
			WM	2.5 Gal Cube	1	None	225	No							X								Unfiltered and unpreserved analysis. Separate RAD onto another workorder
			WM	1 L Glass Amber	1	None	230	No															Analyze duplicate, not MS/MSD.
			WM	1 Gal Cube	6	None	235	No								X							Only test if first or second rain events of the year. Deliver to ABC Labs in Ventura, CA
			WM	1 L Glass Amber	2	None	250	No											X				
	Outfall010_20230111_Comp_F	1/11/2023 1545	WM	1 L Poly	1	None	195	No						X									Filter and preserve w/in 24hrs of receipt at lab
			WM	borosilicate vials	1	None	320	No													X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall010_20230111_Comp_Extra	1/11/2023 1545	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	500 mL Poly	2	None	135	No			H												Hold
			WM	1 L Glass Amber	2	None	250	No											H				Hold

Legend A = Annual, R = Routine,

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dellolah	1/11/23 1400	H&A		1/11/23 1400 EC
	1/11/23 1910	EC		1/11/23 1910

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

* Hand-delivered to ABC Labs with copy of COC

2.3/2.3 1.9/1.9 1.7/17 SCI

570-123653 Chain of Custody

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3/11/2023

123653

CHAIN OF CUSTODY FORM

Client Name/Address.
Haley & Aldrich
5333 Mission Center Rd Suite 300
San Diego, CA 92108

Eurofins Calscience Irvine Contact: Christian Bondoc
17461 Derian Ave Suite #100
Irvine CA 92614
Tel· 949-260-3218

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Sampler· Adrian Mobeka

Project:
Boeing-SSFL NPDES
Permit 2023
Annual Outfall [003-007 009, 010]
Outfall 010
Comp

Project Manager· Katherine Miller
520.289.8606, 520.904.6944 (cell)

Field Manager· Mark Dominick
978.234.5033, 818.599.0702 (cell)

ANALYSIS REQUIRED

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R/A Total Recoverable Metals: (E200.7): Al, B, Fe, Ni, V Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	R TCDD (and all congeners) (E1613B)	R/A Cl-, F- SO4, NO3+NO2-N, Perchlorate (E300)	R TDS (SM2540C/E160.1)	A TSS (160.2 (SM2540D))	R/A Total Dissolved Metals (E200.7): Al, B, Fe, Ni, V Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	R Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901 0 or E901 1)	R Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA *	R Cyanide (SM4500-CN-E / E335.2)	A Priority Pollutants-Pesticides+PCBs (E608)	R Total Recoverable Metals: Mercury (E245.1)	R Total Dissolved Metals: Mercury (E245.1)		Comments
Outfall 010	Outfall010_20230111_Comp	1/11/2023 0945	WM	500 mL Poly	1	HNO_3	85	No	X										X			
			WM	1 L Glass Amber	2	None	110	No		X												
			WM	500 mL Poly	2	None	135	No			X											48 hours Holding Time NO3 & NO2
			WM	500 mL Poly	1	None	155	No				X										
			WM	1 L Poly	1	None	185	No					X									
			WM	500 mL Poly	1	NaOH	220	No									X					
			WM	2.5 Gal Cube	1	None	225	No							X							Unfiltered and unpreserved analysis, Separate RAD onto another workorder
			WM	1 L Glass Amber	1	None	230	No														Analyze duplicate, not MS/MSD.
			* WM	1 Gal Cube	6	None	235	No								X						Only test if first or second rain events of the year Deliver to ABC Labs in Ventura, CA *
			WM	1 L Glass Amber	2	None	250	No										X				
	Outfall010_20230111_Comp_F	1/11/2023 0945	WM	1 L Poly	1	None	195	No						X								Filter and preserve w/in 24hrs of receipt at lab
			WM	borosilicate vials	1	None	320	No												X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall010_20230111_Comp_Extra	1/11/2023 0945	WM	1 L Glass Amber	2	None	110	No		H												Hold
			WM	500 mL Poly	2	None	135	No			H											Hold
			WM	1 L Glass Amber	2	None	250	No										H				Hold

Legend A = Annual, R = Routine,

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	1/11/23 1400	H&A	[signature]	1/11/23 1400 EC
[signature]	1/11/23 1910	EC	[signature]	1/11/23 1910

Turn-around time: (Check)
24 Hour ______ 72 Hour ______ 10 Day· __X____
48 Hour ______ 5 Day· ______ Normal: ______

Sample Integrity· (Check)
Intact: ______ On Ice:______

Store samples for 6 months.
Data Requirements: (Check)
No Level IV· ______ All Level IV:___X_____

* Hand-delivered to ABC Labs with copy of COC

2.3/2.3 1.9/1.9 1.7/1.7 SCI1

570-123653 Chain of Custody

Rainy Season 2019-2020
Version 2

123653

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Annual Outfall [003-007, 009, 010] Outfall 010 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED																	
									A	A	A	A	A													
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Priority Pollutants-SVOCs (E625)	Asbestos (EPA100.2) OF009 only	Chlorpyrifos, Diazinon (E526.2) Weck Labs in Hacienda Heights, CA	Cr (VI), Total (E218.6)														Comments
Outfall 010	Outfall010_20230111_Comp	1/11/2023 1045	WM	1 L Glass Amber	2	None	175	No	X																	
			WM	1L Poly	1	None	270	No		X																Only at Outfall 009
			WM	1 L Glass Amber	2	None	275	No			X															Extract within 24-Hours of sampling.
			WM	500 mL Poly	1	None	260	No				X														
	Outfall010_20230111_Comp_Extra	1/11/2023 1045	WM	1 L Glass Amber	2	None	175	No	H																	Hold
			WM	1 L Glass Amber	2	None HCl	275	No			H															Hold

Legend: A = Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	1/11/23 1400	H&A		1/11/23 1400 EC
	1/11/23 1910 EC			1/11/23 1910

Turn-around time: (Check)
24 Hour _____ 72 Hour _____ 10 Day ___X___
48 Hour _____ 5 Day _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

3/11/2023

Rainy Season 2019-2020
Version 2

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123653-7

Login Number: 123653
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 1/23/2023 10:39:07 AM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 011 Grab

JOB NUMBER

570-123256-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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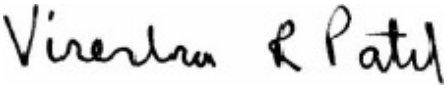
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123256-1
Project/Site: Boeing SSFL NPDES - Outfall 011 Grab

Qualifiers

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc. Job ID: 570-123256-1
Project/Site: Boeing SSFL NPDES - Outfall 011 Grab

Job ID: 570-123256-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123256-1

Comments
No additional comments.

Receipt
The samples were received on 1/9/2023 5:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.9º C and 2.2º C.

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-294547. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 624.1: The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following sample was received preserved with hydrochloric acid: Outfall011_20230108_Grab (570-123256-1). The requested target analyte list contains 2-Chloroethyl vinyl ether and/or Acrolein, which are acid-labile compounds that degrade in an acidic medium.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 1664A: The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-295550.
Method: 1664.

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-295210. 8015B_DRO. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123256-1
Project/Site: Boeing SSFL NPDES - Outfall 011 Grab

Client Sample ID: Outfall011_20230108_Grab
Lab Sample ID: 570-123256-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C13-C28	0.052		0.050	0.036	mg/L	1		8015B	Total/NA
HEM: Oil and Grease	0.59	J,DX	0.99	0.51	mg/L	1		1664A	Total/NA
Specific Conductance	220		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA

Client Sample ID: TB-20230108
Lab Sample ID: 570-123256-3

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: Outfall011_20230108_Grab
Lab Sample ID: 570-123256-1
Date Collected: 01/08/23 16:00
Matrix: Water
Date Received: 01/09/23 17:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			01/09/23 23:04	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			01/09/23 23:04	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			01/09/23 23:04	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			01/09/23 23:04	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/09/23 23:04	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			01/09/23 23:04	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/09/23 23:04	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			01/09/23 23:04	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			01/09/23 23:04	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			01/09/23 23:04	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			01/09/23 23:04	1
Acrolein	ND		5.0	4.6	ug/L			01/09/23 23:04	1
Acrylonitrile	ND		2.0	1.4	ug/L			01/09/23 23:04	1
Benzene	ND		0.50	0.28	ug/L			01/09/23 23:04	1
Bromoform	ND		1.0	0.25	ug/L			01/09/23 23:04	1
Bromomethane	ND		0.50	0.22	ug/L			01/09/23 23:04	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			01/09/23 23:04	1
Chlorobenzene	ND		0.50	0.19	ug/L			01/09/23 23:04	1
Dibromochloromethane	ND		0.50	0.15	ug/L			01/09/23 23:04	1
Chloroethane	ND		1.0	0.29	ug/L			01/09/23 23:04	1
Chloroform	ND		0.50	0.19	ug/L			01/09/23 23:04	1
Chloromethane	ND		0.50	0.30	ug/L			01/09/23 23:04	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			01/09/23 23:04	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			01/09/23 23:04	1
Bromodichloromethane	ND		0.50	0.19	ug/L			01/09/23 23:04	1
Ethylbenzene	ND		0.50	0.25	ug/L			01/09/23 23:04	1
Methylene Chloride	ND		2.0	0.57	ug/L			01/09/23 23:04	1
m,p-Xylene	ND		1.0	0.17	ug/L			01/09/23 23:04	1
Naphthalene	ND		1.0	0.33	ug/L			01/09/23 23:04	1
o-Xylene	ND		0.50	0.15	ug/L			01/09/23 23:04	1
Tetrachloroethene	ND		0.50	0.21	ug/L			01/09/23 23:04	1
Toluene	ND		0.50	0.23	ug/L			01/09/23 23:04	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			01/09/23 23:04	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			01/09/23 23:04	1
Trichloroethene	ND		0.50	0.17	ug/L			01/09/23 23:04	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			01/09/23 23:04	1
Vinyl chloride	ND		0.50	0.47	ug/L			01/09/23 23:04	1
Xylenes, Total	ND		1.0	0.17	ug/L			01/09/23 23:04	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			01/09/23 23:04	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			01/09/23 23:04	1
Cyclohexane	ND		2.0	0.79	ug/L			01/09/23 23:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*60 - 140*		*01/09/23 23:04*	*1*
Toluene-d8 (Surr)	*98*		*60 - 140*		*01/09/23 23:04*	*1*
Dibromofluoromethane (Surr)	*98*		*60 - 140*		*01/09/23 23:04*	*1*

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: TB-20230108 **Lab Sample ID: 570-123256-3**
Date Collected: 01/08/23 16:00 **Matrix: Water**
Date Received: 01/09/23 17:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			01/09/23 22:18	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			01/09/23 22:18	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			01/09/23 22:18	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			01/09/23 22:18	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/09/23 22:18	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			01/09/23 22:18	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/09/23 22:18	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			01/09/23 22:18	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			01/09/23 22:18	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			01/09/23 22:18	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			01/09/23 22:18	1
Acrolein	ND		5.0	4.6	ug/L			01/09/23 22:18	1
Acrylonitrile	ND		2.0	1.4	ug/L			01/09/23 22:18	1
Benzene	ND		0.50	0.28	ug/L			01/09/23 22:18	1
Bromoform	ND		1.0	0.25	ug/L			01/09/23 22:18	1
Bromomethane	ND		0.50	0.22	ug/L			01/09/23 22:18	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			01/09/23 22:18	1
Chlorobenzene	ND		0.50	0.19	ug/L			01/09/23 22:18	1
Dibromochloromethane	ND		0.50	0.15	ug/L			01/09/23 22:18	1
Chloroethane	ND		1.0	0.29	ug/L			01/09/23 22:18	1
Chloroform	ND		0.50	0.19	ug/L			01/09/23 22:18	1
Chloromethane	ND		0.50	0.30	ug/L			01/09/23 22:18	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			01/09/23 22:18	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			01/09/23 22:18	1
Bromodichloromethane	ND		0.50	0.19	ug/L			01/09/23 22:18	1
Ethylbenzene	ND		0.50	0.25	ug/L			01/09/23 22:18	1
Methylene Chloride	ND		2.0	0.57	ug/L			01/09/23 22:18	1
m,p-Xylene	ND		1.0	0.17	ug/L			01/09/23 22:18	1
Naphthalene	ND		1.0	0.33	ug/L			01/09/23 22:18	1
o-Xylene	ND		0.50	0.15	ug/L			01/09/23 22:18	1
Tetrachloroethene	ND		0.50	0.21	ug/L			01/09/23 22:18	1
Toluene	ND		0.50	0.23	ug/L			01/09/23 22:18	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			01/09/23 22:18	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			01/09/23 22:18	1
Trichloroethene	ND		0.50	0.17	ug/L			01/09/23 22:18	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			01/09/23 22:18	1
Vinyl chloride	ND		0.50	0.47	ug/L			01/09/23 22:18	1
Xylenes, Total	ND		1.0	0.17	ug/L			01/09/23 22:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			01/09/23 22:18	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			01/09/23 22:18	1
Cyclohexane	ND		2.0	0.79	ug/L			01/09/23 22:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*60 - 140*		*01/09/23 22:18*	*1*
Toluene-d8 (Surr)	*100*		*60 - 140*		*01/09/23 22:18*	*1*
Dibromofluoromethane (Surr)	*94*		*60 - 140*		*01/09/23 22:18*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-123256-1
Project/Site: Boeing SSFL NPDES - Outfall 011 Grab

Method: SW846 8015B - Gasoline Range Organics - (GC)

Client Sample ID: Outfall011_20230108_Grab
Lab Sample ID: 570-123256-1
Date Collected: 01/08/23 16:00
Matrix: Water
Date Received: 01/09/23 17:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	30	ug/L			01/10/23 16:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*66*		*20 - 144*		*01/10/23 16:23*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-123256-1
Project/Site: Boeing SSFL NPDES - Outfall 011 Grab

Method: SW846 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: Outfall011_20230108_Grab
Lab Sample ID: 570-123256-1
Date Collected: 01/08/23 16:00
Matrix: Water
Date Received: 01/09/23 17:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	0.052		0.050	0.036	mg/L		01/11/23 17:20	01/18/23 12:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*89*		*53 - 151*	*01/11/23 17:20*	*01/18/23 12:56*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-123256-1
Project/Site: Boeing SSFL NPDES - Outfall 011 Grab

General Chemistry

Client Sample ID: Outfall011_20230108_Grab
Lab Sample ID: 570-123256-1
Date Collected: 01/08/23 16:00
Matrix: Water
Date Received: 01/09/23 17:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM: Oil and Grease (1664A)	**0.59**	**J,DX**	0.99	0.51	mg/L		01/12/23 18:34	01/13/23 16:10	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance (SM 2510B)	**220**		1.0	1.0	umhos/cm			01/19/23 20:56	1
Settleable Solids (SM 2540F)	ND		0.10	0.10	mL/L			01/10/23 14:44	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 011 Grab

Job ID: 570-123256-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)
570-123256-1	Outfall011_20230108_Grab	101	98	98
570-123256-3	TB-20230108	99	100	94
LCS 570-294547/1003	Lab Control Sample	100	99	100
LCSD 570-294547/4	Lab Control Sample Dup	101	103	99
MB 570-294547/6	Method Blank	97	99	96

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8015B - Gasoline Range Organics - (GC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		BFB1
Lab Sample ID	Client Sample ID	(20-144)
570-123206-D-1 MS	Matrix Spike	113
570-123206-D-1 MSD	Matrix Spike Duplicate	114
570-123256-1	Outfall011_20230108_Grab	66
LCS 570-294807/3	Lab Control Sample	105
LCSD 570-294807/4	Lab Control Sample Dup	93
MB 570-294807/5	Method Blank	79

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		OTCSN1
Lab Sample ID	Client Sample ID	(53-151)
570-123256-1	Outfall011_20230108_Grab	89

Surrogate Legend

OTCSN = n-Octacosane (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-294547/6
Matrix: Water
Analysis Batch: 294547

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			01/09/23 16:40	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			01/09/23 16:40	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			01/09/23 16:40	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			01/09/23 16:40	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/09/23 16:40	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			01/09/23 16:40	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/09/23 16:40	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			01/09/23 16:40	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			01/09/23 16:40	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			01/09/23 16:40	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			01/09/23 16:40	1
Acrolein	ND		5.0	4.6	ug/L			01/09/23 16:40	1
Acrylonitrile	ND		2.0	1.4	ug/L			01/09/23 16:40	1
Benzene	ND		0.50	0.28	ug/L			01/09/23 16:40	1
Bromoform	ND		1.0	0.25	ug/L			01/09/23 16:40	1
Bromomethane	ND		0.50	0.22	ug/L			01/09/23 16:40	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			01/09/23 16:40	1
Chlorobenzene	ND		0.50	0.19	ug/L			01/09/23 16:40	1
Dibromochloromethane	ND		0.50	0.15	ug/L			01/09/23 16:40	1
Chloroethane	ND		1.0	0.29	ug/L			01/09/23 16:40	1
Chloroform	ND		0.50	0.19	ug/L			01/09/23 16:40	1
Chloromethane	ND		0.50	0.30	ug/L			01/09/23 16:40	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			01/09/23 16:40	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			01/09/23 16:40	1
Bromodichloromethane	ND		0.50	0.19	ug/L			01/09/23 16:40	1
Ethylbenzene	ND		0.50	0.25	ug/L			01/09/23 16:40	1
Methylene Chloride	ND		2.0	0.57	ug/L			01/09/23 16:40	1
m,p-Xylene	ND		1.0	0.17	ug/L			01/09/23 16:40	1
Naphthalene	ND		1.0	0.33	ug/L			01/09/23 16:40	1
o-Xylene	ND		0.50	0.15	ug/L			01/09/23 16:40	1
Tetrachloroethene	ND		0.50	0.21	ug/L			01/09/23 16:40	1
Toluene	ND		0.50	0.23	ug/L			01/09/23 16:40	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			01/09/23 16:40	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			01/09/23 16:40	1
Trichloroethene	ND		0.50	0.17	ug/L			01/09/23 16:40	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			01/09/23 16:40	1
Vinyl chloride	ND		0.50	0.47	ug/L			01/09/23 16:40	1
Xylenes, Total	ND		1.0	0.17	ug/L			01/09/23 16:40	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			01/09/23 16:40	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			01/09/23 16:40	1
Cyclohexane	ND		2.0	0.79	ug/L			01/09/23 16:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*60 - 140*		*01/09/23 16:40*	*1*
Toluene-d8 (Surr)	*99*		*60 - 140*		*01/09/23 16:40*	*1*
Dibromofluoromethane (Surr)	*96*		*60 - 140*		*01/09/23 16:40*	*1*

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-294547/1003
Matrix: Water
Analysis Batch: 294547

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	10.0	9.18		ug/L		92	70 - 130
1,1,2,2-Tetrachloroethane	10.0	9.49		ug/L		95	60 - 140
1,1,2-Trichloroethane	10.0	9.43		ug/L		94	70 - 130
1,1-Dichloroethane	10.0	9.46		ug/L		95	70 - 130
1,1-Dichloroethene	10.0	9.10		ug/L		91	50 - 150
1,2-Dichlorobenzene	10.0	9.44		ug/L		94	65 - 135
1,2-Dichloroethane	10.0	9.48		ug/L		95	70 - 130
1,2-Dichloropropane	10.0	9.47		ug/L		95	35 - 165
1,3-Dichlorobenzene	10.0	9.76		ug/L		98	70 - 130
1,4-Dichlorobenzene	10.0	9.04		ug/L		90	65 - 135
2-Chloroethyl vinyl ether	10.0	8.98		ug/L		90	1 - 225
Acrolein	20.0	15.8		ug/L		79	60 - 140
Acrylonitrile	100	99.9		ug/L		100	60 - 140
Benzene	10.0	9.23		ug/L		92	65 - 135
Bromoform	10.0	9.10		ug/L		91	70 - 130
Bromomethane	10.0	6.41		ug/L		64	15 - 185
Carbon tetrachloride	10.0	9.49		ug/L		95	70 - 130
Chlorobenzene	10.0	9.37		ug/L		94	65 - 135
Dibromochloromethane	10.0	9.42		ug/L		94	70 - 135
Chloroethane	10.0	10.1		ug/L		101	40 - 160
Chloroform	10.0	9.02		ug/L		90	70 - 135
Chloromethane	10.0	10.7		ug/L		107	1 - 205
cis-1,2-Dichloroethene	10.0	9.24		ug/L		92	60 - 140
cis-1,3-Dichloropropene	10.0	9.19		ug/L		92	25 - 175
Bromodichloromethane	10.0	9.39		ug/L		94	65 - 135
Ethylbenzene	10.0	9.41		ug/L		94	60 - 140
Methylene Chloride	10.0	8.67		ug/L		87	60 - 140
m,p-Xylene	10.0	9.22		ug/L		92	60 - 140
Naphthalene	10.0	10.1		ug/L		101	60 - 140
o-Xylene	10.0	9.31		ug/L		93	60 - 140
Tetrachloroethene	10.0	9.23		ug/L		92	70 - 130
Toluene	10.0	9.33		ug/L		93	70 - 130
trans-1,2-Dichloroethene	10.0	9.09		ug/L		91	70 - 130
trans-1,3-Dichloropropene	10.0	9.62		ug/L		96	50 - 150
Trichloroethene	10.0	9.38		ug/L		94	65 - 135
Trichlorofluoromethane	10.0	11.4		ug/L		114	50 - 150
Vinyl chloride	10.0	11.0		ug/L		110	5 - 195
Xylenes, Total	20.0	18.5		ug/L		93	60 - 140
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	9.51		ug/L		95	60 - 140
1,2-Dichloro-1,1,2-trifluoroethane	20.0	19.8		ug/L		99	60 - 140
Cyclohexane	10.0	8.96		ug/L		90	60 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*60 - 140*
Toluene-d8 (Surr)	*99*		*60 - 140*
Dibromofluoromethane (Surr)	*100*		*60 - 140*

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-294547/4
Matrix: Water
Analysis Batch: 294547

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane			10.0	9.43		ug/L		94	70 - 130	3	36
1,1,2,2-Tetrachloroethane			10.0	9.20		ug/L		92	60 - 140	3	61
1,1,2-Trichloroethane			10.0	9.42		ug/L		94	70 - 130	0	45
1,1-Dichloroethane			10.0	9.56		ug/L		96	70 - 130	1	40
1,1-Dichloroethene			10.0	9.16		ug/L		92	50 - 150	1	32
1,2-Dichlorobenzene			10.0	9.59		ug/L		96	65 - 135	2	57
1,2-Dichloroethane			10.0	9.74		ug/L		97	70 - 130	3	49
1,2-Dichloropropane			10.0	9.67		ug/L		97	35 - 165	2	55
1,3-Dichlorobenzene			10.0	9.80		ug/L		98	70 - 130	0	43
1,4-Dichlorobenzene			10.0	9.32		ug/L		93	65 - 135	3	57
2-Chloroethyl vinyl ether			10.0	9.65		ug/L		96	1 - 225	7	71
Acrolein			20.0	15.1		ug/L		76	60 - 140	4	60
Acrylonitrile			100	97.2		ug/L		97	60 - 140	3	60
Benzene			10.0	9.69		ug/L		97	65 - 135	5	61
Bromoform			10.0	9.43		ug/L		94	70 - 130	4	42
Bromomethane			10.0	8.83		ug/L		88	15 - 185	32	61
Carbon tetrachloride			10.0	9.50		ug/L		95	70 - 130	0	41
Chlorobenzene			10.0	9.40		ug/L		94	65 - 135	0	53
Dibromochloromethane			10.0	9.29		ug/L		93	70 - 135	1	50
Chloroethane			10.0	10.7		ug/L		107	40 - 160	5	78
Chloroform			10.0	9.05		ug/L		91	70 - 135	0	30
Chloromethane			10.0	10.9		ug/L		109	1 - 205	2	60
cis-1,2-Dichloroethene			10.0	9.22		ug/L		92	60 - 140	0	30
cis-1,3-Dichloropropene			10.0	10.1		ug/L		101	25 - 175	9	58
Bromodichloromethane			10.0	9.91		ug/L		99	65 - 135	5	56
Ethylbenzene			10.0	9.84		ug/L		98	60 - 140	4	63
Methylene Chloride			10.0	8.49		ug/L		85	60 - 140	2	28
m,p-Xylene			10.0	9.56		ug/L		96	60 - 140	4	30
Naphthalene			10.0	10.2		ug/L		102	60 - 140	1	30
o-Xylene			10.0	9.58		ug/L		96	60 - 140	3	30
Tetrachloroethene			10.0	9.48		ug/L		95	70 - 130	3	39
Toluene			10.0	9.91		ug/L		99	70 - 130	6	41
trans-1,2-Dichloroethene			10.0	8.97		ug/L		90	70 - 130	1	45
trans-1,3-Dichloropropene			10.0	9.74		ug/L		97	50 - 150	1	86
Trichloroethene			10.0	9.90		ug/L		99	65 - 135	5	48
Trichlorofluoromethane			10.0	11.5		ug/L		115	50 - 150	1	84
Vinyl chloride			10.0	11.2		ug/L		112	5 - 195	2	66
Xylenes, Total			20.0	19.1		ug/L		96	60 - 140	3	30
1,1,2-Trichloro-1,2,2-trifluoroethane			10.0	10.0		ug/L		100	60 - 140	5	30
1,2-Dichloro-1,1,2-trifluoroethane			20.0	19.8		ug/L		99	60 - 140	0	30
Cyclohexane			10.0	8.98		ug/L		90	60 - 140	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*60 - 140*
Toluene-d8 (Surr)	*103*		*60 - 140*
Dibromofluoromethane (Surr)	*99*		*60 - 140*

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 570-294807/5
Matrix: Water
Analysis Batch: 294807

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	30	ug/L			01/10/23 14:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*79*		*20 - 144*		*01/10/23 14:21*	*1*

Lab Sample ID: LCS 570-294807/3
Matrix: Water
Analysis Batch: 294807

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (C4-C13)			1920	1960		ug/L		102	71 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*20 - 144*

Lab Sample ID: LCSD 570-294807/4
Matrix: Water
Analysis Batch: 294807

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)			1920	1910		ug/L		99	71 - 120	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*20 - 144*

Lab Sample ID: 570-123206-D-1 MS
Matrix: Water
Analysis Batch: 294807

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (C4-C13)	ND		1920	1990		ug/L		103	54 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*113*		*20 - 144*

Lab Sample ID: 570-123206-D-1 MSD
Matrix: Water
Analysis Batch: 294807

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)	ND		1920	1910		ug/L		99	54 - 125	4	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*114*		*20 - 144*

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-295550/1-A
Matrix: Water
Analysis Batch: 295796

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 295550

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM: Oil and Grease	ND		1.0	0.51	mg/L		01/12/23 18:34	01/13/23 16:10	1

Lab Sample ID: LCS 570-295550/2-A
Matrix: Water
Analysis Batch: 295796

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 295550

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
HEM: Oil and Grease			40.0	37.6		mg/L		94	78 - 114		

Lab Sample ID: LCSD 570-295550/3-A
Matrix: Water
Analysis Batch: 295796

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 295550

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM: Oil and Grease			40.0	36.8		mg/L		92	78 - 114	2	18

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-297351/10
Matrix: Water
Analysis Batch: 297351

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			01/19/23 19:00	1

Lab Sample ID: 570-124593-F-2 DU
Matrix: Water
Analysis Batch: 297351

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Specific Conductance	1300			1300		umhos/cm				0.5	25

Method: SM 2540F - Solids, Settleable

Lab Sample ID: 570-123302-A-1 DU
Matrix: Water
Analysis Batch: 294859

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Settleable Solids	ND			ND		mL/L				NC	10

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123256-1
Project/Site: Boeing SSFL NPDES - Outfall 011 Grab

GC/MS VOA

Analysis Batch: 294547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123256-1	Outfall011_20230108_Grab	Total/NA	Water	624.1	
570-123256-3	TB-20230108	Total/NA	Water	624.1	
MB 570-294547/6	Method Blank	Total/NA	Water	624.1	
LCS 570-294547/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-294547/4	Lab Control Sample Dup	Total/NA	Water	624.1	

GC VOA

Analysis Batch: 294807

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123256-1	Outfall011_20230108_Grab	Total/NA	Water	8015B	
MB 570-294807/5	Method Blank	Total/NA	Water	8015B	
LCS 570-294807/3	Lab Control Sample	Total/NA	Water	8015B	
LCSD 570-294807/4	Lab Control Sample Dup	Total/NA	Water	8015B	
570-123206-D-1 MS	Matrix Spike	Total/NA	Water	8015B	
570-123206-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B	

GC Semi VOA

Prep Batch: 295210

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123256-1	Outfall011_20230108_Grab	Total/NA	Water	3510C	

Analysis Batch: 296554

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123256-1	Outfall011_20230108_Grab	Total/NA	Water	8015B	295210

General Chemistry

Analysis Batch: 294859

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123256-1	Outfall011_20230108_Grab	Total/NA	Water	SM 2540F	
570-123302-A-1 DU	Duplicate	Total/NA	Water	SM 2540F	

Prep Batch: 295550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123256-1	Outfall011_20230108_Grab	Total/NA	Water	1664A	
MB 570-295550/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-295550/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-295550/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 295796

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123256-1	Outfall011_20230108_Grab	Total/NA	Water	1664A	295550
MB 570-295550/1-A	Method Blank	Total/NA	Water	1664A	295550
LCS 570-295550/2-A	Lab Control Sample	Total/NA	Water	1664A	295550
LCSD 570-295550/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	295550

Analysis Batch: 297351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123256-1	Outfall011_20230108_Grab	Total/NA	Water	SM 2510B	
MB 570-297351/10	Method Blank	Total/NA	Water	SM 2510B	

General Chemistry (Continued)

Analysis Batch: 297351 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124593-F-2 DU	Duplicate	Total/NA	Water	SM 2510B	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-123256-1
Project/Site: Boeing SSFL NPDES - Outfall 011 Grab

Client Sample ID: Outfall011_20230108_Grab
Lab Sample ID: 570-123256-1
Date Collected: 01/08/23 16:00
Matrix: Water
Date Received: 01/09/23 17:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	294547	01/09/23 23:04	A1W	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Analysis	8015B		1	5 mL	5 mL	294807	01/10/23 16:23	P1R	EET CAL 4
	Instrument ID: GC1									
Total/NA	Prep	3510C			251 mL	2.5 mL	295210	01/11/23 17:20	UFLU	EET CAL 4
Total/NA	Analysis	8015B		1	10 mL	10 mL	296554	01/18/23 12:56	N1A	EET CAL 4
	Instrument ID: GC69A									
Total/NA	Prep	1664A			1010 mL	1000 mL	295550	01/12/23 18:34	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			295796	01/13/23 16:10	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									
Total/NA	Analysis	SM 2510B		1			297351	01/19/23 20:56	UAPD	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	294859	01/10/23 14:44	GG0B	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB-20230108
Lab Sample ID: 570-123256-3
Date Collected: 01/08/23 16:00
Matrix: Water
Date Received: 01/09/23 17:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	294547	01/09/23 22:18	A1W	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123256-1
Project/Site: Boeing SSFL NPDES - Outfall 011 Grab

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-12-22 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123256-1
Project/Site: Boeing SSFL NPDES - Outfall 011 Grab

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
8015B	Gasoline Range Organics - (GC)	SW846	EET CAL 4
8015B	Diesel Range Organics (DRO) (GC)	SW846	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAL 4
5030C	Purge and Trap	SW846	EET CAL 4

Protocol References:

1664A = EPA-821-98-002

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 011 Grab

Job ID: 570-123256-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123256-1	Outfall011_20230108_Grab	Water	01/08/23 16:00	01/09/23 17:15
570-123256-3	TB-20230108	Water	01/08/23 16:00	01/09/23 17:15

123256

Eurofins Calscience Irvine

570-123256 Chain of Custody

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 011 Grab
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2018-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED													
									A	A	R	R	R	R/Q/A	A	A	A					
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	MST: Bacteroidales: Human (SAM378-867) Source Molecular in Miami Lakes, FL	E. coli (SM9221) Enthalpy Analytical Orange CA	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs + VOCs PP + xylenes, Freon 11 Freon 113 Freon 123A, Cyclohexane cis-1,2-DCE (E624)	VOCs - only A+A+2CVE (E624)	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)					
Outfall 011	Outfall011_20230108_Grab	1/8/2023 1603	~~WM~~	~~125mL Sterile Poly~~	~~1~~	~~None~~	~~5~~	~~No~~	~~X~~													~~Deliver to lab ASAP 8 hr hold time~~
			WM	125mL Sterile Poly	3	$Na_2S_2O_3$	10	No		X												Deliver to lab ASAP 8 hr hold time, Need 1x, 10x, 100x dilutions
			WM	1 L Glass Amber	2	HCl	15	No					X									
			WM	40 mL VOA	3	HCl	45	No						X								
			WM	40 mL VOA	3	None	55	No							X							
			WM	40 mL VOA	3	HCl	60	No								X						
			WM	1 L Glass Amber	2	None	65	No									X					
			WM	1 L Poly	1	None	70	No			X											
			WM	500 mL Poly	1	None	75	No				X										
	Outfall011_20230108_Grab_Extra	1/8/2023 1603	WM	1 L Glass Amber	2	HCl	15	No					H									Hold
			WM	40 mL VOA	3	HCl	45	No						H								Hold
			WM	40 mL VOA	3	None	55	No							H							Hold
			WM	500 mL Poly	1	None	75	No				H										Hold
Trip Blanks	TB-20230108	1/8/2023 1603	WQ	40 mL VOA	2	HCl	45	No						X								
			WQ	40 mL VOA	2	None	55	No							X							

Field Readings	Meter serial #
Field Readings: (Include units)	
Time of Readings: 1600	
DO 12.38 mg/L	
pH 8.30 pH unit	
Temp 54.5 °C/°F	
TRC 0.0 mg/L	
Field readings QC	
Checked by: [signature]	
Date/Time: 1-8-2023 1,600	

Comments

Deliver to lab ASAP 8 hr hold time

Legend: A=Annual, R=Routine, Q=Quarterly

Relinquished By	Date/Time:	Company:	Received By	Date/Time:	
[signature] Dominick	1-9 2023	1315 H&A	[signature]	1/9/23	1315 EC
[signature]	1/9/23	1715 EC	[signature]	1/9/23	1715

Turn-around time: (Check)
24 Hour _____ 72 Hour _____ 10 Day __X__
48 Hour _____ 5 Day _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

1.9/1.9 2.2/2.2 SCH

1 Page 24 of 25 2 3

1/23/2023

2019-2020 Rainy Season
Version 5

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123256-1

Login Number: 123256
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 1/21/2023 11:51:01 AM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 011 Grab

JOB NUMBER

570-123256-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization

Virendra R Patil

Generated
1/21/2023 11:51:01 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123256-2
Project/Site: Boeing SSFL NPDES - Outfall 011 Grab

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123256-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123256-2

Comments
No additional comments.

Receipt
The samples were received on 1/9/2023 5:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.9º C and 2.2º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Quant-Tray - E. Coli - level 4 required - E. Coli - level 4 required: This method was subcontracted to Enthalpy Analytical - Barkley. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123256-2
Project/Site: Boeing SSFL NPDES - Outfall 011 Grab

Method	Method Description	Protocol	Laboratory
1103.1	E. Coli	EPA	Enthalpy

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Enthalpy = Enthalpy Analytical - Barkley, 931 W. Barkley Ave, Orange, CA 92868

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123256-2
Project/Site: Boeing SSFL NPDES - Outfall 011 Grab

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123256-1	Outfall011_20230108_Grab	Water	01/08/23 16:00	01/09/23 17:15

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 476867
Report Level: IV
Report Date: 01/19/2023

Microbiology Tests

Analytical Report *prepared for:*

Virendra Patel
Eurofins Calscience Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Project: BOEING NPDES SSFL - Boeing SSFL NPDES - Outfall 001 - GRAB - #44024446

Authorized for release by:

Quynhgiao Le, Project Manager
714-7716900
quynhgiao.le@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

ENTHALPY ANALYTICAL

Sample Summary

Virendra Patel Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780	Lab Job #: Project No: Location: Date Received:	476867 BOEING NPDES SSFL Boeing SSFL NPDES - Outfall 001 - GRAB - #44024446 01/09/23

Sample ID	Lab ID	Collected	Matrix
OUTFALL011_20230108_GRAB (570-123256-1)	476867-001	01/08/23 16:00	Water

ENTHALPY ANALYTICAL

Case Narrative

MICROBIOLOGY TESTS (SM 9223BB)

Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Virendra Patel	Lab Job Number:	476867
	Project No:	BOEING NPDES SSFL
	Location:	Boeing SSFL NPDES - Outfall 001 - GRAB - #44024446
	Date Received:	01/09/23

This data package contains sample and QC results for one water sample, requested for the above referenced project on 01/09/23. See attached cooler receipt form for any sample receipt problems or discrepancies.

Chain of Custody

2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

3.6105

Chain of Custody Record

476867

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203577.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-123256-2
Address: 931 W. Barkley Ave, ,	Due Date Requested: 1/23/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 001 - GRAB	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify), Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall011_20230108_Grab (570-123256-1)	1/8/23	16:00 Pacific		Water			X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/9/23 1630	EC		1/9/23 1630	EA
Relinquished by: AS 1/9	1/9/23 AS 1/9 1650	EA 1/9	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact:	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

1/21/2023

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: Eurofins

Project: Boeing SSFL NPDES – Outfall 001 Grad

Date Received: 1/9/23

Sampler's Name Present: ☐ Yes ☒ No

Section 2

Sample(s) received in a cooler? ☒ Yes, How many? 1 ☐ No (skip section 2)

Sample Temp (°C) (No Cooler): _____

Sample Temp (°C), One from each cooler: #1: 3.6 #2: _____ #3: _____ #4: _____

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: _____

Section 3

Was the cooler packed with: ☒ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other _____

Cooler Temp (°C): #1: 0.5 #2: _____ #3: _____ #4: _____

Section 4	YES	NO	N/A
Was a COC received?	X		
Are sample IDs present?	X		
Are sampling dates & times present?	X		
Is a relinquished signature present?	X		
Are the tests required clearly indicated on the COC?	X		
Are custody seals present?		X	
If custody seals are present, were they intact?			X
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)	X		
Did all samples arrive intact? If no, indicate in Section 4 below.	X		
Did all bottle labels agree with COC? (ID, dates and times)	X		
Were the samples collected in the correct containers for the required tests?	X		
Are the containers labeled with the correct preservatives?			X
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			X
Was a sufficient amount of sample submitted for the requested tests?	X		

Section 5 Explanations/Comments

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: _____ Date/Time _____

☐ Email (email sent to/on): _____ / _____

Project Manager's response:

Completed By: _____ Date: 1/9/23

ICOC No:
570-203574

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required - E. Coli - level 4 required)	E Coli (1x, 10x, 100x Dilutions) - 8 hour hold time - level 4

Results & QC Summary

ENTHALPY ANALYTICAL

Total Coliform / E. coli by Quanti-Tray

Lab #: 476867 **Project#:** BOEING NPDES SSFL

Client: Eurofins Calscience Tustin **Location:** Boeing SSFL NPDES - Outfall 001 - ...

Field ID:	OUTFALL011_20230108_GRAB (570-123256-1)	**Batch#:**	304891	**Analyzed:**	01/10/23 11:40
Lab ID:	476867-001	**Sampled:**	01/08/23 16:00	**Prep:**	
Matrix:	Water	**Received:**	01/09/23	**Analysis:**	SM 9223Bb
DiIn Fac:	1.000	**Prepared:**	01/09/23 16:13	**Analyst:**	JAA

476867-001 Analyte	Result	RL	Units	Qual
Coliform, E. Coli	**110**	1.0	MPN/100ml	H

Legend

H: Holding time was exceeded

RL: Reporting Limit

SM 9223 B-b, Quanti-Tray

Prep Analyst: ST Prep Date/Time: 01/09/23 1653 QC Batch ID: 304091 Batch Page 1 of 1

Read Analyst: JA Read Date/Time 01/10/23 1140

Media Used (check one): ☐Colisure ☒Colilert 18 ☐Colilert 24 Media Lot #: EU396 Pipette Lot #: A103941, A108842, A104116

Monthly Quanti-tray Sealer Check: Did it Pass? ☑Yes ☐No Date of last check*: 01/03/23 * Quanti-Tray Sealer Check must be performed monthly

Total and E. coli: Incubator ID: F Incubator In, Temp/Time: 1714 35.1 Incubator Out, Temp/Time: 1140 35.1

Fecal Coliform: Water Bath ID: NA Water Bath In, Temp/Time: NA Water Bath Out, Temp/Time: NA

Client	Client Sample ID	Enthalpy Sample ID	Dilution Factor	Total Coliform Counts Large Wells	Total Coliform Counts Small Wells	MPN Table Value	Final Result, MPN	E. coli Counts Large Wells	E. coli Counts Small Wells	MPN Table Value	Final Result, MPN	Fecal Coliform Counts (Colilert 18 only) Large Wells	Fecal Coliform Counts (Colilert 18 only) Small Wells	MPN Table Value	Final Result, MPN	Comments
		4768865-001	1X	49	48	>2419.6	>24000	49	48	>2419.6	>24000					CA 1X
		↓	10X	49	48	>2419.6	>24000	49	24	435.2	4400					↓ 10X
		↓	100X	49	30	613.1	61,000	27	2	40.4	4000					↓ 100X
		4768864-001	1X	49	48	>2419.6	>24000	42	9	107.6	~~11000~~ 110	JA 1/10/23				EA 1X
		↓	10X JA 1/10/23	~~42~~ 49	28	547.5	5500	10	0	11.0	110					↓ 10X
		↓	100X	21	2	29.2	2,900	3	0	3.1	310					↓ 100X
		4768866-001	1X	49	48	>2419.6	>24000	49	22	387.3	390					SW 1X
		↓	10X	49	24	435.2	4400	27	2	40.4	400					↓ 10X
		↓	100X	25	4	39.3	3900	1	0	1.0	100					↓ 100X
							JA 01/10/23									
Quality Control		**Culture ID**														
Positive +/+ (E. Coli)		01/05/23		49	48	>2419.6	>24000	49	48	>2419.6	>24000					
Positive +/- (K. Pneumonia)		↓		49	40	>2419.6	>24000	0	0	<1	<1					
Negative -/- (P. Aeruginosa)		+		0	0	<1	<1	0	0	<1	<1					

Data Entered By: Data Reviewed By:

Eurofins Calscience Irvine

570-123256 Chain of Custody

123256

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich, 5333 Mission Center Rd Suite 300, San Diego, CA 92108	Project: Boeing-SSFL NPDES, Permit 2023, Annual Outfall [001, 002, 011, 018], Outfall 011, Grab
Eurofins Calscience Irvine Contact: Christian Bondoc, 17461 Derian Ave Suite #100, Irvine CA 92614, Tel: 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller, 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick, 978.234.5033, 818.599.0702 (cell)

Field Readings | Meter serial #

Field Readings: (Include units)

Time of Readings: 1600

DO 12.39 mg/L

pH 6.30 pH unit

Temp 54.5 °C/°F

TRC 0.0 mg/L

Field readings QC

Checked by: [signature]

Date/Time: 1-8-2023 / 1600

ANALYSIS REQUIRED

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	A: MST-Bacteroidales, Human (SAM348-357), Source Molecular in Miami Lakes, FL	A: E. coli (SM9221) Enthalpy Analytical Orange CA	R: Settleable Solids (E160.5 (SM2540F))	R: Conductivity (SM2510B / E120.1)	R: Oil & Grease (E1664A-HEM)	R/Q/A: VOCs + VOCs PP + xylenes, Freon 11 Freon 113 Freon 123A, Cyclohexane cis-1,2-DCE (E624)	A: VOCs - only A+A+2CVE (E624)	A: TPH: gas (GRO(C4-C12)) (SW8015B)	A: TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	Comments
Outfall 011	Outfall011_20230108_Grab	1/8/2023 1600	~~WM~~	~~125mL Sterile Poly~~	~~1~~	~~None~~	~~5~~	~~No~~	X									~~Deliver to lab ASAP 8 hr hold time~~
			WM	125mL Sterile Poly	3	$Na_2S_2O_3$	10	No		X								Deliver to lab ASAP 8 hr hold time, Need 1x, 10x, 100x dilutions
			WM	1 L Glass Amber	2	HCl	15	No					X					
			WM	40 mL VOA	3	HCl	45	No						X				
			WM	40 mL VOA	3	None	55	No							X			
			WM	40 mL VOA	3	HCl	60	No								X		
			WM	1 L Glass Amber	2	None	65	No									X	
			WM	1 L Poly	1	None	70	No			X							
			WM	500 mL Poly	1	None	75	No				X						
	Outfall011_20230108_Grab_Extra	1/8/2023 1600	WM	1 L Glass Amber	2	HCl	15	No					H					Hold
			WM	40 mL VOA	3	HCl	45	No						H				Hold
			WM	40 mL VOA	3	None	55	No							H			Hold
			WM	500 mL Poly	1	None	75	No				H						Hold
Trip Blanks	TB-20230108	1/8/2023 1600	WQ	40 mL VOA	2	HCl	45	No						X				
			WQ	40 mL VOA	2	None	55	No							X			

Legend: A=Annual, R=Routine, Q=Quarterly

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-9-2023 1315	H/A	[signature]	1/9/23 1315 EC
[signature]	1/9/23 1715	EC	[signature]	1/9/23 1715

Turn-around time: (Check)
24 Hour ____ 72 Hour ____ 10 Day X
48 Hour ____ 5 Day ____ Normal: ____

Sample Integrity: (Check)
Intact: ____ On Ice: ____

Store samples for 6 months.

Data Requirements: (Check)
No Level IV: ____ All Level IV: X

1.9/1.9 2.2/2.2 SC11

2019-2020 Rainy Season
Version 5

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123256-2

Login Number: 123256
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/24/2023 2:25:11 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 011 Grab

JOB NUMBER

570-123256-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization

Virendra R Patil

Generated
2/24/2023 2:25:11 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123256-3
Project/Site: Boeing SSFL NPDES - Outfall 011 Grab

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123256-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123256-3

Comments
No additional comments.

Receipt
The samples were received on 1/9/2023 5:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.9º C and 2.2º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Weck 624.1 - 2-CEVE only (ug/L units) with MDLs (J): This method was subcontracted to Weck Laboratories, Inc.. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123256-3
Project/Site: Boeing SSFL NPDES - Outfall 011 Grab

Method	Method Description	Protocol	Laboratory
624	EPA 624 Purgeable Organic Compounds	EPA	Weck Lab

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Weck Lab = Weck Laboratories, Inc., 14859 East Clark Avenue, City of Industry, CA 917451396

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 011 Grab

Job ID: 570-123256-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123256-2	Outfall001_20230108_Grab_Extra	Water	01/08/23 16:00	01/09/23 17:15

Original COC confirmed sample ID is Outfall011_20230108_Grab.
KRM 04/15/2023

Certificate of Analysis

FINAL REPORT

Work Orders: 3B02096

Project: 570-123256-3

Attn: Virendra Patel

Client: Eurofins Calscience - Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Report Date: 2/21/2023
Received Date: 2/2/2023
Turnaround Time: Normal
Phones: (949) 261-1022
Fax: (949) 260-3297
P.O. #:
Billing Code:

Dear Virendra Patel,

Enclosed are the results of analyses for samples received 2/02/23 with the Chain-of-Custody document. The samples were received in good condition, at 1.9 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: Outfall001_20230108_Grab_Extra (570-122256-2) — Sampled: 01/08/23 16:00 by Client

3B02096-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 624.1			**Instr:** GCMS21				
Batch ID: W3B0481 **Preparation:** EPA 5030B			**Prepared:** 02/07/23 06:54				**Analyst:** ADM
2-Chloroethyl vinyl ether	ND	0.19	1.0	ug/l	1	02/07/23	O-09
Surrogate(s)							
1,2-Dichloroethane-d4	*113%*		*82-125*	*Conc: 56.4*		*02/07/23*	
4-Bromofluorobenzene	*98%*		*88-108*	*Conc: 48.8*		*02/07/23*	
Toluene-d8	*98%*		*92-112*	*Conc: 49.1*		*02/07/23*	

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

Quality Control Results

Volatile Organic Compounds by P&T and GC/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3B0481-BLK1)					**Prepared & Analyzed: 02/07/23**						
2-Chloroethyl vinyl ether	ND	0.19	1.0	ug/l							
Surrogate(s)											
1,2-Dichloroethane-d4	*51.1*			*ug/l*	*50.0*		*102*	*82-125*			
4-Bromofluorobenzene	*49.0*			*ug/l*	*50.0*		*98*	*88-108*			
Toluene-d8	*48.5*			*ug/l*	*50.0*		*97*	*92-112*			
LCS (W3B0481-BS1)					**Prepared & Analyzed: 02/07/23**						
2-Chloroethyl vinyl ether	55.4	0.19	1.0	ug/l	50.0		111	0.1-305			
Surrogate(s)											
1,2-Dichloroethane-d4	*50.1*			*ug/l*	*50.0*		*100*	*82-125*			
4-Bromofluorobenzene	*48.2*			*ug/l*	*50.0*		*96*	*88-108*			
Toluene-d8	*52.1*			*ug/l*	*50.0*		*104*	*92-112*			
LCS Dup (W3B0481-BSD1)					**Prepared & Analyzed: 02/07/23**						
2-Chloroethyl vinyl ether	54.8	0.19	1.0	ug/l	50.0		110	0.1-305	1	25	
Surrogate(s)											
1,2-Dichloroethane-d4	*50.3*			*ug/l*	*50.0*		*101*	*82-125*			
4-Bromofluorobenzene	*52.4*			*ug/l*	*50.0*		*105*	*88-108*			
Toluene-d8	*49.2*			*ug/l*	*50.0*		*98*	*92-112*			

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

Notes and Definitions

Item	Definition
O-09	This sample was received with the EPA recommended holding time expired.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Reviewed by:

Tiffany T. Felix For Rahul R. Nair
Project Manager

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

31

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California	
Address: 14859 East Clark Avenue, ,	Due Date Requested: 2/22/2023	Analysis Requested	
City: City of Industry	TAT Requested (days):		
State, Zip: CA, 917451396			
Phone:	PO #:		
Email:	WO #:		
Project Name: Boeing SSFL NPDES - Outfall 011 Grab	Project #: 44024446		
Site:	SSOW#:		

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck 624.1 - 2-CEVE only (ug/L units) with MDLs (J))
			Preservation Code:		X	X	
Outfall001_20230108_Grab_Extra (570-123256-2)	1/8/23	16:00 Pacific		Water			X

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under cha maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accred attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are re*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time:	Company	Received by: Date/Time:

ICOC No:
570-206007

Containers

Count	Container Type	Preservative
3	Voa Vial 40ml - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
2	SUBCONTRACT	SUB (Weck 624.1 - 2-CEVE only (ug/L units) with MDLs (J))	Level IV, EQUIS 5C, MDL reporting w/J flag. Pe

COC	COC matches sample labels?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Receipt Information	Sample Temperature	1.9°C			
	Samples received on ice?	☒	☐		
	Ice Type (Blue/Wet)	WET			
	All samples intact?	☒	☐		
	Samples in proper containers?	☒	☐		
	Sufficient sample volume?	☒	☐		
	Samples intact?	☒	☐		
	Received within holding time?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Sample Preservation Verification?	Sample labels checked for correct preservation?	☒	☐	☐	
	VOC Headspace: (No) none, If Yes (See comment) 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☒	☐	☐ <6m
	pH verified upon receipt? Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 525.2<2; 6710B<2; 608.3 5-9	☐	☐	☒	pH paper Lot#
	Free Chlorine Tested <0.1	☐	☐	☒	Cl Test Strip Lot
	O&G pH <2 verified?	☐	☐	☐	pH paper Lot#
	pH adjusted for O&G	☐	☐	☐	pH Reading: / Acid Lot# / Amt added:
	Project Manager notified?	☐	☐	☒	

08

PM Comments

Sample Receipt Checklist Prepared by:

Signature: *Lester Abad* Date: 02/02/23

123256

Eurofins Calscience Irvine

570-123256 Chain of Custody

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 011 Grab
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

ANALYSIS REQUIRED (A = MST, A = E. coli, R = Settleable Solids, R = Conductivity, R = Oil & Grease, R/Q/A = VOCs + VOCs PP, A = VOCs - only, A = TPH: gas, A = TPH: diesel)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	MST-Bacteroidales, Human (SAM348-357) Source Molecular in Miami Lakes, FL (A)	E. coli (SM9221) Enthalpy Analytical Orange CA (A)	Settleable Solids (E160.5 (SM2540F)) (R)	Conductivity (SM2510B / E120.1) (R)	Oil & Grease (E1664A-HEM) (R)	VOCs + VOCs PP + xylenes, Freon 11 Freon 113 Freon 123A, Cyclohexane cis-1,2-DCE (E624) (R/Q/A)	VOCs - only A+A+2CVE (E624) (A)	TPH: gas (GRO(C4-C12)) (SW8015B) (A)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B) (A)	Comments
Outfall 011	Outfall011_20230108_Grab	1/8/2023 1603	~~WM~~	~~125mL Sterile Poly~~	~~1~~	~~None~~	~~5~~	~~No~~	~~X~~									~~Deliver to lab ASAP 8 hr hold time~~
			WM	125mL Sterile Poly	3	$Na_2S_2O_3$	10	No		X								Deliver to lab ASAP 8 hr hold time, Need 1x, 10x, 100x dilutions
			WM	1 L Glass Amber	2	HCl	15	No					X					
			WM	40 mL VOA	3	HCl	45	No						X				
			WM	40 mL VOA	3	None	55	No							X			
			WM	40 mL VOA	3	HCl	60	No								X		
			WM	1 L Glass Amber	2	None	65	No									X	
			WM	1 L Poly	1	None	70	No			X							
			WM	500 mL Poly	1	None	75	No				X						
	Outfall011_20230108_Grab_Extra	1/8/2023 1603	WM	1 L Glass Amber	2	HCl	15	No					H					Hold
			WM	40 mL VOA	3	HCl	45	No						H				Hold
			WM	40 mL VOA	3	None	55	No							H			Hold
			WM	500 mL Poly	1	None	75	No				H						Hold
Trip Blanks	TB-20230108	1/8/2023 1603	WQ	40 mL VOA	2	HCl	45	No						X				
			WQ	40 mL VOA	2	None	55	No							X			

Handwritten beside the sample rows: 1, 2, 3

Field Readings | Meter serial #

Field Readings: (Include units)
Time of Readings: 1600
DO 12.39 mg/L
pH 6.30 pH unit
Temp 54.5 °C/°F
TRC 0.0 mg/L
Field readings QC
Checked by: [signature]
Date/Time: 1-8-2023 / 1600

Legend: A=Annual, R=Routine, Q=Quarterly

Relinquished By	Date/Time	Company	Received By	Date/Time
[signature]	1-9-2023 1315	H/A	[signature]	1/9/23 1315 EC
[signature]	1/9/23 1715	EC	[signature]	1/9/23 1715

Turn-around time: (Check)
24 Hour ____ 72 Hour ____ 10 Day X
48 Hour ____ 5 Day ____ Normal: ____

Sample Integrity: (Check)
Intact: ____ On Ice: ____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: ____ All Level IV: X

1.9/1.9 2.2/2.2 SC11

2019-2020 Rainy Season
Version 5

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123256-3

Login Number: 123256
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/7/2023 12:31:25 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 011 - COMP

JOB NUMBER

570-123391-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Eurofins Calscience

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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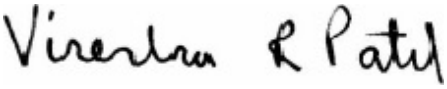

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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
BA	Relative percent difference out of control
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LQ	LCS/LCSD recovery above method control limits

GC Semi VOA

Qualifier	Qualifier Description
LQ	LCS/LCSD recovery above method control limits
PI	Primary and confirm results varied by > than 40% RPD

HPLC/IC

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)
MB	Analyte present in the method blank

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123391-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123391-1

Comments
No additional comments.

Receipt
The samples were received on 1/10/2023 5:58 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.3º C.

GC/MS VOA
Method 8260B SIM: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-295037. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method 625.1 SIM: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 570-296163 and analytical batch 570-298493 recovered outside control limits for the following analytes: Benzidine. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 625.1 SIM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 570-296163 and analytical batch 570-298493 recovered outside control limits for the following analytes: Benzidine.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
Method 608.3: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 570-296012 and analytical batch 570-297231 recovered outside control limits for the following analytes: PCB-1016 and PCB-1260. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 608.3: The closing continuing calibration verification (CCVC) associated with batch 570-297704 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: Outfall011_20230110_Comp_F (570-123391-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: Outfall011_20230110_Comp_F (570-123391-1), (570-123391-C-1 MS) and (570-123391-C-1 MSD). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

Job ID: 570-123391-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

Method 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-296012. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. 608 LL

Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-296163. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. 625 Sim

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Job ID: 570-123391-1

Client Sample ID: Outfall011_20230110_Comp_F — Lab Sample ID: 570-123391-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	62	J,DX BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Antimony	0.62	J,DX BU	2.0	0.36	ug/L	1		200.8	Dissolved
Copper	5.9	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Selenium	0.65	J,DX BU	2.0	0.52	ug/L	1		200.8	Dissolved
Barium	11	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Iron	53	BU	20	3.7	ug/L	1		200.8	Dissolved
Nickel	1.7	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Vanadium	1.1	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Arsenic	1.2	BU	1.0	0.16	ug/L	1		200.8	Dissolved
Zinc	13	J,DX BU MB	20	2.8	ug/L	1		200.8	Dissolved
Manganese	25	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Chromium	0.65	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Hardness as calcium carbonate	33		7.1	0.50	mg/L	1		SM 2340B	Dissolved

Client Sample ID: Outfall011_20230110_Comp — Lab Sample ID: 570-123391-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bis(2-ethylhexyl) phthalate	3.9	J,DX	4.8	3.5	ug/L	1		625.1 SIM	Total/NA
Chromium, hexavalent	0.067	J,DX	0.20	0.019	ug/L	1		218.6	Total/NA
Chloride	30		1.0	0.36	mg/L	1		300.0	Total/NA
Nitrite as N	0.15		0.10	0.043	mg/L	1		300.0	Total/NA
Fluoride	0.11		0.10	0.046	mg/L	1		300.0	Total/NA
Nitrate as N	1.3		0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate	10		1.0	0.24	mg/L	1		300.0	Total/NA
Nitrate Nitrite as N	1.5		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Boron	64	J,DX	500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Antimony	0.47	J,DX	2.0	0.36	ug/L	1		200.8	Total Recoverable
Copper	6.5		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	0.40	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Barium	13		1.0	0.17	ug/L	1		200.8	Total Recoverable
Iron	190		20	3.7	ug/L	1		200.8	Total Recoverable
Nickel	1.7	J,DX	2.0	0.17	ug/L	1		200.8	Total Recoverable
Vanadium	1.3	J,DX	2.0	0.17	ug/L	1		200.8	Total Recoverable
Arsenic	1.3		1.0	0.16	ug/L	1		200.8	Total Recoverable
Zinc	17	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Manganese	61		1.0	0.41	ug/L	1		200.8	Total Recoverable
Chromium	0.69	J,DX	2.0	0.14	ug/L	1		200.8	Total Recoverable
Cobalt	0.19	J,DX	1.0	0.14	ug/L	1		200.8	Total Recoverable
Hardness as calcium carbonate	34		7.1	0.50	mg/L	1		SM 2340B	Total Recoverable
Ammonia	0.059	J,DX	0.075	0.032	mg/L	1		350.1	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Client Sample ID: Outfall011_20230110_Comp (Continued)
Lab Sample ID: 570-123391-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Turbidity	5.5		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Dissolved Solids	150		10	8.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	4.2		1.1	0.87	mg/L	1		SM 2540D	Total/NA
Carbon, Total Organic	11		2.0	1.1	mg/L	4		SM 5310D	Total/NA
MBAS	0.12	J,DX	0.30	0.054	mg/L	1		SM 5540C	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: SW846 8260B SIM - Volatile Organic Compounds (GC/MS)

Client Sample ID: Outfall011_20230110_Comp
Lab Sample ID: 570-123391-2
Date Collected: 01/10/23 11:05
Matrix: Water
Date Received: 01/10/23 17:58

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.55	ug/L			01/12/23 13:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorobutane (Surr)	*114*		*67 - 133*		*01/12/23 13:32*	*1*

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: Outfall011_20230110_Comp
Lab Sample ID: 570-123391-2
Date Collected: 01/10/23 11:05
Matrix: Water
Date Received: 01/10/23 17:58

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		0.19	0.12	ug/L		01/17/23 05:12	01/31/23 10:59	1
1,2-Dichlorobenzene	ND		0.19	0.11	ug/L		01/17/23 05:12	01/31/23 10:59	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.19	0.088	ug/L		01/17/23 05:12	01/31/23 10:59	1
1,3-Dichlorobenzene	ND		0.19	0.11	ug/L		01/17/23 05:12	01/31/23 10:59	1
1,4-Dichlorobenzene	ND		0.19	0.13	ug/L		01/17/23 05:12	01/31/23 10:59	1
2,4,6-Trichlorophenol	ND		0.97	0.13	ug/L		01/17/23 05:12	01/31/23 10:59	1
2,4-Dichlorophenol	ND		0.97	0.13	ug/L		01/17/23 05:12	01/31/23 10:59	1
2,4-Dimethylphenol	ND		0.19	0.12	ug/L		01/17/23 05:12	01/31/23 10:59	1
2,4-Dinitrophenol	ND		4.8	4.1	ug/L		01/17/23 05:12	01/31/23 10:59	1
2,4-Dinitrotoluene	ND		0.19	0.11	ug/L		01/17/23 05:12	01/31/23 10:59	1
2,6-Dinitrotoluene	ND		0.19	0.17	ug/L		01/17/23 05:12	01/31/23 10:59	1
2-Chloronaphthalene	ND		0.19	0.14	ug/L		01/17/23 05:12	01/31/23 10:59	1
2-Chlorophenol	ND		0.19	0.092	ug/L		01/17/23 05:12	01/31/23 10:59	1
2-Nitrophenol	ND		4.8	3.4	ug/L		01/17/23 05:12	01/31/23 10:59	1
3,3'-Dichlorobenzidine	ND		4.8	2.9	ug/L		01/17/23 05:12	01/31/23 10:59	1
4,6-Dinitro-2-methylphenol	ND		4.8	4.4	ug/L		01/17/23 05:12	01/31/23 10:59	1
4-Bromophenyl phenyl ether	ND		0.19	0.096	ug/L		01/17/23 05:12	01/31/23 10:59	1
4-Chloro-3-methylphenol	ND		0.97	0.13	ug/L		01/17/23 05:12	01/31/23 10:59	1
4-Chlorophenyl phenyl ether	ND		0.19	0.16	ug/L		01/17/23 05:12	01/31/23 10:59	1
4-Nitrophenol	ND		4.8	3.3	ug/L		01/17/23 05:12	01/31/23 10:59	1
Acenaphthene	ND		0.19	0.095	ug/L		01/17/23 05:12	01/31/23 10:59	1
Acenaphthylene	ND		0.19	0.13	ug/L		01/17/23 05:12	01/31/23 10:59	1
Anthracene	ND		0.19	0.081	ug/L		01/17/23 05:12	01/31/23 10:59	1
Benzidine	ND	LQ BA	4.8	2.6	ug/L		01/17/23 05:12	01/31/23 10:59	1
Benzo[a]anthracene	ND		0.19	0.12	ug/L		01/17/23 05:12	01/31/23 10:59	1
Benzo[a]pyrene	ND		0.19	0.15	ug/L		01/17/23 05:12	01/31/23 10:59	1
Benzo[b]fluoranthene	ND		0.19	0.11	ug/L		01/17/23 05:12	01/31/23 10:59	1
Benzo[g,h,i]perylene	ND		0.19	0.10	ug/L		01/17/23 05:12	01/31/23 10:59	1
Benzo[k]fluoranthene	ND		0.19	0.11	ug/L		01/17/23 05:12	01/31/23 10:59	1
bis (2-chloroisopropyl) ether	ND		0.19	0.13	ug/L		01/17/23 05:12	01/31/23 10:59	1
Bis(2-chloroethoxy)methane	ND		0.19	0.10	ug/L		01/17/23 05:12	01/31/23 10:59	1
Bis(2-chloroethyl)ether	ND		0.19	0.10	ug/L		01/17/23 05:12	01/31/23 10:59	1
Bis(2-ethylhexyl) phthalate	**3.9**	**J,DX**	4.8	3.5	ug/L		01/17/23 05:12	01/31/23 10:59	1
Butyl benzyl phthalate	ND		0.97	0.65	ug/L		01/17/23 05:12	01/31/23 10:59	1
Chrysene	ND		0.19	0.11	ug/L		01/17/23 05:12	01/31/23 10:59	1
Dibenz(a,h)anthracene	ND		0.19	0.15	ug/L		01/17/23 05:12	01/31/23 10:59	1
Diethyl phthalate	ND		1.9	0.17	ug/L		01/17/23 05:12	01/31/23 10:59	1
Dimethyl phthalate	ND		1.9	0.094	ug/L		01/17/23 05:12	01/31/23 10:59	1
Di-n-butyl phthalate	ND		1.9	1.8	ug/L		01/17/23 05:12	01/31/23 10:59	1
Di-n-octyl phthalate	ND		2.9	0.52	ug/L		01/17/23 05:12	01/31/23 10:59	1
Fluoranthene	ND		0.19	0.097	ug/L		01/17/23 05:12	01/31/23 10:59	1
Fluorene	ND		0.19	0.091	ug/L		01/17/23 05:12	01/31/23 10:59	1
Hexachlorobenzene	ND		0.19	0.13	ug/L		01/17/23 05:12	01/31/23 10:59	1
Hexachlorobutadiene	ND		0.19	0.15	ug/L		01/17/23 05:12	01/31/23 10:59	1
Hexachlorocyclopentadiene	ND		0.19	0.15	ug/L		01/17/23 05:12	01/31/23 10:59	1
Hexachloroethane	ND		0.19	0.12	ug/L		01/17/23 05:12	01/31/23 10:59	1
Indeno[1,2,3-cd]pyrene	ND		0.19	0.12	ug/L		01/17/23 05:12	01/31/23 10:59	1
Isophorone	ND		0.19	0.095	ug/L		01/17/23 05:12	01/31/23 10:59	1
Naphthalene	ND		0.19	0.11	ug/L		01/17/23 05:12	01/31/23 10:59	1

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Client Sample ID: Outfall011_20230110_Comp **Lab Sample ID: 570-123391-2**
Date Collected: 01/10/23 11:05 **Matrix: Water**
Date Received: 01/10/23 17:58

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrobenzene	ND		0.19	0.14	ug/L		01/17/23 05:12	01/31/23 10:59	1
N-Nitrosodimethylamine	ND		0.19	0.18	ug/L		01/17/23 05:12	01/31/23 10:59	1
N-Nitrosodi-n-propylamine	ND		0.19	0.14	ug/L		01/17/23 05:12	01/31/23 10:59	1
N-Nitrosodiphenylamine	ND		0.19	0.10	ug/L		01/17/23 05:12	01/31/23 10:59	1
Pentachlorophenol	ND		0.97	0.82	ug/L		01/17/23 05:12	01/31/23 10:59	1
Phenanthrene	ND		0.19	0.16	ug/L		01/17/23 05:12	01/31/23 10:59	1
Phenol	ND		0.97	0.51	ug/L		01/17/23 05:12	01/31/23 10:59	1
Pyrene	ND		0.19	0.083	ug/L		01/17/23 05:12	01/31/23 10:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*67*		*28 - 127*	*01/17/23 05:12*	*01/31/23 10:59*	*1*
2-Fluorobiphenyl (Surr)	*37*		*31 - 120*	*01/17/23 05:12*	*01/31/23 10:59*	*1*
2-Fluorophenol	*19*		*17 - 120*	*01/17/23 05:12*	*01/31/23 10:59*	*1*
Nitrobenzene-d5	*40*		*27 - 120*	*01/17/23 05:12*	*01/31/23 10:59*	*1*
Phenol-d6 (Surr)	*13*		*10 - 120*	*01/17/23 05:12*	*01/31/23 10:59*	*1*
p-Terphenyl-d14 (Surr)	*67*		*45 - 120*	*01/17/23 05:12*	*01/31/23 10:59*	*1*

Method: 40CFR136A 608.3 - Organochlorine Pesticides in Water

Client Sample ID: Outfall011_20230110_Comp
Lab Sample ID: 570-123391-2
Date Collected: 01/10/23 11:05
Matrix: Water
Date Received: 01/10/23 17:58

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0033	0.0031	ug/L		01/17/23 08:00	01/19/23 13:07	1
alpha-BHC	ND		0.0013	0.0012	ug/L		01/17/23 08:00	01/19/23 13:07	1
beta-BHC	ND		0.0050	0.0039	ug/L		01/17/23 08:00	01/19/23 13:07	1
delta-BHC	ND		0.0033	0.0020	ug/L		01/17/23 08:00	01/19/23 13:07	1
gamma-BHC (Lindane)	ND		0.0013	0.00066	ug/L		01/17/23 08:00	01/19/23 13:07	1
Chlordane (technical)	ND		0.033	0.026	ug/L		01/17/23 08:00	01/19/23 13:07	1
4,4'-DDD	ND		0.0067	0.0044	ug/L		01/17/23 08:00	01/19/23 13:07	1
4,4'-DDE	ND		0.0033	0.0019	ug/L		01/17/23 08:00	01/19/23 13:07	1
4,4'-DDT	ND		0.0033	0.0016	ug/L		01/17/23 08:00	01/19/23 13:07	1
Dieldrin	ND		0.0033	0.0013	ug/L		01/17/23 08:00	01/19/23 13:07	1
Endosulfan I	ND		0.0013	0.0013	ug/L		01/17/23 08:00	01/19/23 13:07	1
Endosulfan II	ND		0.0067	0.0041	ug/L		01/17/23 08:00	01/19/23 13:07	1
Endosulfan sulfate	ND		0.0033	0.0014	ug/L		01/17/23 08:00	01/19/23 13:07	1
Endrin	ND		0.0033	0.0023	ug/L		01/17/23 08:00	01/19/23 13:07	1
Endrin aldehyde	ND		0.033	0.024	ug/L		01/17/23 08:00	01/19/23 13:07	1
Heptachlor	ND		0.0013	0.0012	ug/L		01/17/23 08:00	01/19/23 13:07	1
Heptachlor epoxide	ND		0.0067	0.0039	ug/L		01/17/23 08:00	01/19/23 13:07	1
Toxaphene	ND		0.067	0.054	ug/L		01/17/23 08:00	01/19/23 13:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*62*		*20 - 139*	*01/17/23 08:00*	*01/19/23 13:07*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: 40CFR136A 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Client Sample ID: Outfall011_20230110_Comp
Lab Sample ID: 570-123391-2
Date Collected: 01/10/23 11:05
Matrix: Water
Date Received: 01/10/23 17:58

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND	LQ	0.10	0.044	ug/L		01/17/23 08:00	01/23/23 15:41	1
Aroclor 1221	ND		0.10	0.044	ug/L		01/17/23 08:00	01/23/23 15:41	1
Aroclor 1232	ND		0.10	0.044	ug/L		01/17/23 08:00	01/23/23 15:41	1
Aroclor 1242	ND		0.10	0.044	ug/L		01/17/23 08:00	01/23/23 15:41	1
Aroclor 1248	ND		0.10	0.044	ug/L		01/17/23 08:00	01/23/23 15:41	1
Aroclor 1254	ND		0.10	0.052	ug/L		01/17/23 08:00	01/23/23 15:41	1
Aroclor 1260	ND	LQ	0.10	0.052	ug/L		01/17/23 08:00	01/23/23 15:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*131*		*20 - 154*	*01/17/23 08:00*	*01/23/23 15:41*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography)

Client Sample ID: Outfall011_20230110_Comp
Lab Sample ID: 570-123391-2
Date Collected: 01/10/23 11:05
Matrix: Water
Date Received: 01/10/23 17:58

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.067	J,DX	0.20	0.019	ug/L			01/11/23 06:09	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: Outfall011_20230110_Comp
Lab Sample ID: 570-123391-2
Date Collected: 01/10/23 11:05
Matrix: Water
Date Received: 01/10/23 17:58

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	30		1.0	0.36	mg/L			01/11/23 08:50	1
Nitrite as N	0.15		0.10	0.043	mg/L			01/11/23 08:50	1
Fluoride	0.11		0.10	0.046	mg/L			01/11/23 08:50	1
Nitrate as N	1.3		0.10	0.020	mg/L			01/11/23 08:50	1
Sulfate	10		1.0	0.24	mg/L			01/11/23 08:50	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: Outfall011_20230110_Comp
Lab Sample ID: 570-123391-2
Date Collected: 01/10/23 11:05
Matrix: Water
Date Received: 01/10/23 17:58

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/11/23 15:49	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: Outfall011_20230110_Comp
Lab Sample ID: 570-123391-2
Date Collected: 01/10/23 11:05
Matrix: Water
Date Received: 01/10/23 17:58

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	1.5		0.10	0.020	mg/L			01/13/23 11:53	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: Outfall011_20230110_Comp
Lab Sample ID: 570-123391-2
Date Collected: 01/10/23 11:05
Matrix: Water
Date Received: 01/10/23 17:58

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	64	J,DX	500	3.5	ug/L		01/17/23 06:17	01/17/23 15:37	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: Outfall011_20230110_Comp_F
Lab Sample ID: 570-123391-1
Date Collected: 01/10/23 11:05
Matrix: Water
Date Received: 01/10/23 17:58

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	62	J,DX BU	500	3.5	ug/L			01/13/23 18:37	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: Outfall011_20230110_Comp
Date Collected: 01/10/23 11:05
Date Received: 01/10/23 17:58

Lab Sample ID: 570-123391-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.47**	**J,DX**	2.0	0.36	ug/L		01/13/23 08:13	01/13/23 14:54	1
Cadmium	ND		1.0	0.13	ug/L		01/13/23 08:13	01/13/23 14:54	1
Copper	**6.5**		2.0	0.32	ug/L		01/13/23 08:13	01/13/23 14:54	1
Lead	**0.40**	**J,DX**	1.0	0.12	ug/L		01/13/23 08:13	01/13/23 14:54	1
Selenium	ND		2.0	0.52	ug/L		01/13/23 08:13	01/13/23 14:54	1
Silver	ND		1.0	0.23	ug/L		01/13/23 08:13	01/13/23 14:54	1
Thallium	ND		1.0	0.11	ug/L		01/13/23 08:13	01/13/23 14:54	1
Beryllium	ND		0.50	0.26	ug/L		01/13/23 08:13	01/13/23 14:54	1
Barium	**13**		1.0	0.17	ug/L		01/13/23 08:13	01/13/23 14:54	1
Iron	**190**		20	3.7	ug/L		01/13/23 08:13	01/13/23 14:54	1
Nickel	**1.7**	**J,DX**	2.0	0.17	ug/L		01/13/23 08:13	01/13/23 14:54	1
Vanadium	**1.3**	**J,DX**	2.0	0.17	ug/L		01/13/23 08:13	01/13/23 14:54	1
Arsenic	**1.3**		1.0	0.16	ug/L		01/13/23 08:13	01/13/23 14:54	1
Zinc	**17**	**J,DX**	20	2.8	ug/L		01/13/23 08:13	01/13/23 14:54	1
Manganese	**61**		1.0	0.41	ug/L		01/13/23 08:13	01/13/23 14:54	1
Chromium	**0.69**	**J,DX**	2.0	0.14	ug/L		01/13/23 08:13	01/13/23 14:54	1
Cobalt	**0.19**	**J,DX**	1.0	0.14	ug/L		01/13/23 08:13	01/13/23 14:54	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: Outfall011_20230110_Comp_F
Lab Sample ID: 570-123391-1
Date Collected: 01/10/23 11:05
Matrix: Water
Date Received: 01/10/23 17:58

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.62**	**J,DX BU**	2.0	0.36	ug/L			01/13/23 10:18	1
Cadmium	ND	BU	1.0	0.13	ug/L			01/13/23 10:18	1
Copper	**5.9**	**BU**	2.0	0.32	ug/L			01/13/23 10:18	1
Lead	ND	BU	1.0	0.12	ug/L			01/13/23 10:18	1
Selenium	**0.65**	**J,DX BU**	2.0	0.52	ug/L			01/13/23 10:18	1
Silver	ND	BU	1.0	0.23	ug/L			01/13/23 10:18	1
Thallium	ND	BU	1.0	0.11	ug/L			01/13/23 10:18	1
Beryllium	ND	BU	0.50	0.26	ug/L			01/13/23 10:18	1
Barium	**11**	**BU**	1.0	0.17	ug/L			01/13/23 10:18	1
Iron	**53**	**BU**	20	3.7	ug/L			01/13/23 10:18	1
Nickel	**1.7**	**J,DX BU**	2.0	0.17	ug/L			01/13/23 10:18	1
Vanadium	**1.1**	**J,DX BU**	2.0	0.17	ug/L			01/13/23 10:18	1
Arsenic	**1.2**	**BU**	1.0	0.16	ug/L			01/13/23 10:18	1
Zinc	**13**	**J,DX BU MB**	20	2.8	ug/L			01/13/23 10:18	1
Manganese	**25**	**BU**	1.0	0.41	ug/L			01/13/23 10:18	1
Chromium	**0.65**	**J,DX BU**	2.0	0.14	ug/L			01/13/23 10:18	1
Cobalt	ND	BU	1.0	0.14	ug/L			01/13/23 10:18	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: Outfall011_20230110_Comp
Lab Sample ID: 570-123391-2
Date Collected: 01/10/23 11:05
Matrix: Water
Date Received: 01/10/23 17:58

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		01/13/23 16:10	01/16/23 19:27	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: Outfall011_20230110_Comp_F
Lab Sample ID: 570-123391-1
Date Collected: 01/10/23 11:05
Matrix: Water
Date Received: 01/10/23 17:58

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	BU	0.20	0.12	ug/L		01/11/23 18:15	01/16/23 17:52	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Client Sample ID: Outfall011_20230110_Comp
Lab Sample ID: 570-123391-2
Date Collected: 01/10/23 11:05
Matrix: Water
Date Received: 01/10/23 17:58

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	34		7.1	0.50	mg/L			01/18/23 16:34	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Client Sample ID: Outfall011_20230110_Comp_F
Lab Sample ID: 570-123391-1
Date Collected: 01/10/23 11:05
Matrix: Water
Date Received: 01/10/23 17:58

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	33		7.1	0.50	mg/L			01/18/23 16:34	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

General Chemistry

Client Sample ID: Outfall011_20230110_Comp
Date Collected: 01/10/23 11:05
Date Received: 01/10/23 17:58

Lab Sample ID: 570-123391-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			01/17/23 17:49	1
Ammonia (EPA 350.1)	**0.059**	**J,DX**	0.075	0.032	mg/L		01/20/23 12:20	01/20/23 14:21	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			01/11/23 14:55	1
Turbidity (SM 2130B)	**5.5**		0.05	0.05	NTU			01/11/23 16:12	1
Total Dissolved Solids (SM 2540C)	**150**		10	8.7	mg/L			01/11/23 14:00	1
Total Suspended Solids (SM 2540D)	**4.2**		1.1	0.87	mg/L			01/16/23 13:12	1
Carbon, Total Organic (SM 5310D)	**11**		2.0	1.1	mg/L			01/13/23 22:24	4
MBAS (SM 5540C)	**0.12**	**J,DX**	0.30	0.054	mg/L		01/10/23 21:00	01/10/23 22:10	1
Biochemical Oxygen Demand (SM5210B)	ND		2.0	1.0	mg/L			01/11/23 16:00	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	14DCBTN (67-133)
570-123391-2	Outfall011_20230110_Comp	114
570-123511-B-2 MS	Matrix Spike	100
570-123511-B-2 MSD	Matrix Spike Duplicate	103
LCS 570-295319/4	Lab Control Sample	107
LCSD 570-295319/5	Lab Control Sample Dup	104
MB 570-295319/7	Method Blank	117

Surrogate Legend

14DCBTN = 1,4-Dichlorobutane (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	TBP (28-127)	FBP (31-120)	2FP (17-120)	NBZ (27-120)	PHL6 (10-120)	TPHd14 (45-120)
570-123391-2	Outfall011_20230110_Comp	67	37	19	40	13	67
LCS 570-296163/2-A	Lab Control Sample	97	107	64	93	45	117
LCSD 570-296163/3-A	Lab Control Sample Dup	106	103	65	97	46	114
MB 570-296163/1-A	Method Blank	60	77	40	77	27	100

Surrogate Legend

TBP = 2,4,6-Tribromophenol
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	TCX2 (20-139)
570-123391-2	Outfall011_20230110_Comp	62
MB 570-296012/1-A	Method Blank	98 PI

Surrogate Legend

TCX = Tetrachloro-m-xylene

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	TCX1 (20-139)
LCS 570-296012/2-A	Lab Control Sample	62 PI
LCSD 570-296012/3-A	Lab Control Sample Dup	50 PI

Surrogate Legend

TCX = Tetrachloro-m-xylene

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	DCB1 (20-154)								
570-123391-2	Outfall011_20230110_Comp	131								
LCS 570-296012/4-A	Lab Control Sample	80 PI								
LCSD 570-296012/5-A	Lab Control Sample Dup	86 PI								
MB 570-296012/1-A	Method Blank	71 PI								

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-295319/7
Matrix: Water
Analysis Batch: 295319

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.55	ug/L			01/12/23 11:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorobutane (Surr)	*117*		*67 - 133*		*01/12/23 11:45*	*1*

Lab Sample ID: LCS 570-295319/4
Matrix: Water
Analysis Batch: 295319

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane			20.0	17.5		ug/L		87	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,4-Dichlorobutane (Surr)	*107*		*67 - 133*

Lab Sample ID: LCSD 570-295319/5
Matrix: Water
Analysis Batch: 295319

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane			20.0	17.1		ug/L		85	75 - 120	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,4-Dichlorobutane (Surr)	*104*		*67 - 133*

Lab Sample ID: 570-123511-B-2 MS
Matrix: Water
Analysis Batch: 295319

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane	ND		20.0	18.4		ug/L		92	75 - 120		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,4-Dichlorobutane (Surr)	*100*		*67 - 133*

Lab Sample ID: 570-123511-B-2 MSD
Matrix: Water
Analysis Batch: 295319

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane	ND		20.0	17.1		ug/L		86	75 - 120	7	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,4-Dichlorobutane (Surr)	*103*		*67 - 133*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-296163/1-A
Matrix: Water
Analysis Batch: 298493

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296163

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		0.20	0.13	ug/L		01/16/23 13:07	01/25/23 11:19	1
1,2-Dichlorobenzene	ND		0.20	0.11	ug/L		01/16/23 13:07	01/25/23 11:19	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.20	0.091	ug/L		01/16/23 13:07	01/25/23 11:19	1
1,3-Dichlorobenzene	ND		0.20	0.12	ug/L		01/16/23 13:07	01/25/23 11:19	1
1,4-Dichlorobenzene	ND		0.20	0.14	ug/L		01/16/23 13:07	01/25/23 11:19	1
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		01/16/23 13:07	01/25/23 11:19	1
2,4-Dichlorophenol	ND		1.0	0.14	ug/L		01/16/23 13:07	01/25/23 11:19	1
2,4-Dimethylphenol	ND		0.20	0.13	ug/L		01/16/23 13:07	01/25/23 11:19	1
2,4-Dinitrophenol	ND		5.0	4.3	ug/L		01/16/23 13:07	01/25/23 11:19	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		01/16/23 13:07	01/25/23 11:19	1
2,6-Dinitrotoluene	ND		0.20	0.18	ug/L		01/16/23 13:07	01/25/23 11:19	1
2-Chloronaphthalene	ND		0.20	0.14	ug/L		01/16/23 13:07	01/25/23 11:19	1
2-Chlorophenol	ND		0.20	0.096	ug/L		01/16/23 13:07	01/25/23 11:19	1
2-Nitrophenol	ND		5.0	3.5	ug/L		01/16/23 13:07	01/25/23 11:19	1
3,3'-Dichlorobenzidine	ND		5.0	3.0	ug/L		01/16/23 13:07	01/25/23 11:19	1
4,6-Dinitro-2-methylphenol	ND		5.0	4.5	ug/L		01/16/23 13:07	01/25/23 11:19	1
4-Bromophenyl phenyl ether	ND		0.20	0.10	ug/L		01/16/23 13:07	01/25/23 11:19	1
4-Chloro-3-methylphenol	ND		1.0	0.13	ug/L		01/16/23 13:07	01/25/23 11:19	1
4-Chlorophenyl phenyl ether	ND		0.20	0.17	ug/L		01/16/23 13:07	01/25/23 11:19	1
4-Nitrophenol	ND		5.0	3.4	ug/L		01/16/23 13:07	01/25/23 11:19	1
Acenaphthene	ND		0.20	0.098	ug/L		01/16/23 13:07	01/25/23 11:19	1
Acenaphthylene	ND		0.20	0.13	ug/L		01/16/23 13:07	01/25/23 11:19	1
Anthracene	ND		0.20	0.084	ug/L		01/16/23 13:07	01/25/23 11:19	1
Benzidine	ND		5.0	2.7	ug/L		01/16/23 13:07	01/25/23 11:19	1
Benzo[a]anthracene	ND		0.20	0.12	ug/L		01/16/23 13:07	01/25/23 11:19	1
Benzo[a]pyrene	ND		0.20	0.15	ug/L		01/16/23 13:07	01/25/23 11:19	1
Benzo[b]fluoranthene	ND		0.20	0.11	ug/L		01/16/23 13:07	01/25/23 11:19	1
Benzo[g,h,i]perylene	ND		0.20	0.11	ug/L		01/16/23 13:07	01/25/23 11:19	1
Benzo[k]fluoranthene	ND		0.20	0.11	ug/L		01/16/23 13:07	01/25/23 11:19	1
bis (2-chloroisopropyl) ether	ND		0.20	0.13	ug/L		01/16/23 13:07	01/25/23 11:19	1
Bis(2-chloroethoxy)methane	ND		0.20	0.11	ug/L		01/16/23 13:07	01/25/23 11:19	1
Bis(2-chloroethyl)ether	ND		0.20	0.10	ug/L		01/16/23 13:07	01/25/23 11:19	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		01/16/23 13:07	01/25/23 11:19	1
Butyl benzyl phthalate	ND		1.0	0.67	ug/L		01/16/23 13:07	01/25/23 11:19	1
Chrysene	ND		0.20	0.11	ug/L		01/16/23 13:07	01/25/23 11:19	1
Dibenz(a,h)anthracene	ND		0.20	0.16	ug/L		01/16/23 13:07	01/25/23 11:19	1
Diethyl phthalate	ND		2.0	0.18	ug/L		01/16/23 13:07	01/25/23 11:19	1
Dimethyl phthalate	ND		2.0	0.098	ug/L		01/16/23 13:07	01/25/23 11:19	1
Di-n-butyl phthalate	ND		2.0	1.8	ug/L		01/16/23 13:07	01/25/23 11:19	1
Di-n-octyl phthalate	ND		3.0	0.54	ug/L		01/16/23 13:07	01/25/23 11:19	1
Fluoranthene	ND		0.20	0.10	ug/L		01/16/23 13:07	01/25/23 11:19	1
Fluorene	ND		0.20	0.095	ug/L		01/16/23 13:07	01/25/23 11:19	1
Hexachlorobenzene	ND		0.20	0.13	ug/L		01/16/23 13:07	01/25/23 11:19	1
Hexachlorobutadiene	ND		0.20	0.15	ug/L		01/16/23 13:07	01/25/23 11:19	1
Hexachlorocyclopentadiene	ND		0.20	0.15	ug/L		01/16/23 13:07	01/25/23 11:19	1
Hexachloroethane	ND		0.20	0.13	ug/L		01/16/23 13:07	01/25/23 11:19	1
Indeno[1,2,3-cd]pyrene	ND		0.20	0.13	ug/L		01/16/23 13:07	01/25/23 11:19	1
Isophorone	ND		0.20	0.099	ug/L		01/16/23 13:07	01/25/23 11:19	1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: MB 570-296163/1-A
Matrix: Water
Analysis Batch: 298493

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296163

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.20	0.11	ug/L		01/16/23 13:07	01/25/23 11:19	1
Nitrobenzene	ND		0.20	0.14	ug/L		01/16/23 13:07	01/25/23 11:19	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		01/16/23 13:07	01/25/23 11:19	1
N-Nitrosodi-n-propylamine	ND		0.20	0.14	ug/L		01/16/23 13:07	01/25/23 11:19	1
N-Nitrosodiphenylamine	ND		0.20	0.11	ug/L		01/16/23 13:07	01/25/23 11:19	1
Pentachlorophenol	ND		1.0	0.84	ug/L		01/16/23 13:07	01/25/23 11:19	1
Phenanthrene	ND		0.20	0.16	ug/L		01/16/23 13:07	01/25/23 11:19	1
Phenol	ND		1.0	0.52	ug/L		01/16/23 13:07	01/25/23 11:19	1
Pyrene	ND		0.20	0.086	ug/L		01/16/23 13:07	01/25/23 11:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*60*		*28 - 127*	*01/16/23 13:07*	*01/25/23 11:19*	*1*
2-Fluorobiphenyl (Surr)	*77*		*31 - 120*	*01/16/23 13:07*	*01/25/23 11:19*	*1*
2-Fluorophenol	*40*		*17 - 120*	*01/16/23 13:07*	*01/25/23 11:19*	*1*
Nitrobenzene-d5	*77*		*27 - 120*	*01/16/23 13:07*	*01/25/23 11:19*	*1*
Phenol-d6 (Surr)	*27*		*10 - 120*	*01/16/23 13:07*	*01/25/23 11:19*	*1*
p-Terphenyl-d14 (Surr)	*100*		*45 - 120*	*01/16/23 13:07*	*01/25/23 11:19*	*1*

Lab Sample ID: LCS 570-296163/2-A
Matrix: Water
Analysis Batch: 298493

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296163

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4-Trichlorobenzene	20.0	18.2		ug/L		91	57 - 130
1,2-Dichlorobenzene	20.0	20.4		ug/L		102	40 - 120
1,2-Diphenylhydrazine(as Azobenzene)	20.0	22.3		ug/L		112	60 - 115
1,3-Dichlorobenzene	20.0	19.7		ug/L		99	37 - 120
1,4-Dichlorobenzene	20.0	20.2		ug/L		101	39 - 120
2,4,6-Trichlorophenol	20.0	22.1		ug/L		110	52 - 129
2,4-Dichlorophenol	20.0	17.2		ug/L		86	53 - 122
2,4-Dimethylphenol	20.0	18.1		ug/L		90	42 - 120
2,4-Dinitrophenol	20.0	31.2		ug/L		156	1 - 173
2,4-Dinitrotoluene	20.0	22.9		ug/L		114	48 - 127
2,6-Dinitrotoluene	20.0	25.7		ug/L		129	68 - 137
2-Chloronaphthalene	20.0	23.6		ug/L		118	65 - 120
2-Chlorophenol	20.0	20.7		ug/L		103	36 - 120
2-Nitrophenol	20.0	15.2		ug/L		76	45 - 167
3,3'-Dichlorobenzidine	20.0	20.8		ug/L		104	8 - 213
4,6-Dinitro-2-methylphenol	20.0	23.9		ug/L		120	53 - 130
4-Bromophenyl phenyl ether	20.0	24.0		ug/L		120	65 - 120
4-Chloro-3-methylphenol	20.0	15.2		ug/L		76	41 - 128
4-Chlorophenyl phenyl ether	20.0	24.1		ug/L		120	38 - 145
4-Nitrophenol	20.0	11.7		ug/L		59	13 - 129
Benzidine	20.0	25.6		ug/L		128	20 - 164
bis (2-chloroisopropyl) ether	20.0	25.7		ug/L		129	63 - 139
Bis(2-chloroethoxy)methane	20.0	21.4		ug/L		107	49 - 165
Bis(2-chloroethyl)ether	20.0	24.9		ug/L		124	43 - 126
Bis(2-ethylhexyl) phthalate	20.0	19.8		ug/L		99	29 - 137

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-296163/2-A
Matrix: Water
Analysis Batch: 298493

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296163

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Butyl benzyl phthalate	20.0	20.5		ug/L		103	1 - 140
Diethyl phthalate	20.0	23.2		ug/L		116	1 - 120
Dimethyl phthalate	20.0	23.5		ug/L		118	1 - 120
Di-n-butyl phthalate	20.0	21.9		ug/L		110	8 - 120
Di-n-octyl phthalate	20.0	18.8		ug/L		94	19 - 132
Hexachlorobenzene	20.0	24.8		ug/L		124	8 - 142
Hexachlorobutadiene	20.0	16.7		ug/L		83	38 - 120
Hexachlorocyclopentadiene	20.0	23.5		ug/L		117	43 - 145
Hexachloroethane	20.0	18.1		ug/L		90	55 - 120
Isophorone	20.0	19.3		ug/L		97	47 - 180
Nitrobenzene	20.0	18.3		ug/L		92	54 - 158
N-Nitrosodimethylamine	20.0	14.7		ug/L		73	20 - 120
N-Nitrosodi-n-propylamine	20.0	20.7		ug/L		103	14 - 198
N-Nitrosodiphenylamine	20.0	26.2		ug/L		131	65 - 133
Pentachlorophenol	20.0	17.3		ug/L		86	38 - 152
Phenol	20.0	10.0		ug/L		50	17 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol	*97*		*28 - 127*
2-Fluorobiphenyl (Surr)	*107*		*31 - 120*
2-Fluorophenol	*64*		*17 - 120*
Nitrobenzene-d5	*93*		*27 - 120*
Phenol-d6 (Surr)	*45*		*10 - 120*
p-Terphenyl-d14 (Surr)	*117*		*45 - 120*

Lab Sample ID: LCSD 570-296163/3-A
Matrix: Water
Analysis Batch: 298493

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296163

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene	20.0	17.7		ug/L		88	57 - 130	3	30
1,2-Dichlorobenzene	20.0	20.4		ug/L		102	40 - 120	0	20
1,2-Diphenylhydrazine(as Azobenzene)	20.0	21.1		ug/L		106	60 - 115	5	30
1,3-Dichlorobenzene	20.0	19.5		ug/L		98	37 - 120	1	20
1,4-Dichlorobenzene	20.0	19.4		ug/L		97	39 - 120	4	20
2,4,6-Trichlorophenol	20.0	24.1		ug/L		121	52 - 129	9	35
2,4-Dichlorophenol	20.0	18.4		ug/L		92	53 - 122	7	30
2,4-Dimethylphenol	20.0	18.2		ug/L		91	42 - 120	1	35
2,4-Dinitrophenol	20.0	34.5		ug/L		173	1 - 173	10	79
2,4-Dinitrotoluene	20.0	21.7		ug/L		109	48 - 127	5	25
2,6-Dinitrotoluene	20.0	27.5		ug/L		137	68 - 137	7	29
2-Chloronaphthalene	20.0	22.9		ug/L		114	65 - 120	3	15
2-Chlorophenol	20.0	21.8		ug/L		109	36 - 120	5	37
2-Nitrophenol	20.0	17.9		ug/L		89	45 - 167	16	33
3,3'-Dichlorobenzidine	20.0	20.9		ug/L		104	8 - 213	0	65
4,6-Dinitro-2-methylphenol	20.0	26.0		ug/L		130	53 - 130	8	122
4-Bromophenyl phenyl ether	20.0	22.9		ug/L		114	65 - 120	5	26
4-Chloro-3-methylphenol	20.0	16.4		ug/L		82	41 - 128	8	44

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-296163/3-A
Matrix: Water
Analysis Batch: 298493

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296163

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
4-Chlorophenyl phenyl ether	20.0	23.1		ug/L		115	38 - 145	4	36
4-Nitrophenol	20.0	13.1		ug/L		65	13 - 129	11	79
Benzidine	20.0	36.7	LQ BA	ug/L		183	20 - 164	35	30
bis (2-chloroisopropyl) ether	20.0	25.4		ug/L		127	63 - 139	1	46
Bis(2-chloroethoxy)methane	20.0	20.7		ug/L		104	49 - 165	3	32
Bis(2-chloroethyl)ether	20.0	24.1		ug/L		121	43 - 126	3	65
Bis(2-ethylhexyl) phthalate	20.0	21.0		ug/L		105	29 - 137	6	50
Butyl benzyl phthalate	20.0	21.2		ug/L		106	1 - 140	3	36
Diethyl phthalate	20.0	22.8		ug/L		114	1 - 120	2	60
Dimethyl phthalate	20.0	22.8		ug/L		114	1 - 120	3	110
Di-n-butyl phthalate	20.0	21.7		ug/L		109	8 - 120	1	28
Di-n-octyl phthalate	20.0	20.0		ug/L		100	19 - 132	6	42
Hexachlorobenzene	20.0	24.1		ug/L		120	8 - 142	3	33
Hexachlorobutadiene	20.0	16.4		ug/L		82	38 - 120	2	38
Hexachlorocyclopentadiene	20.0	23.9		ug/L		120	43 - 145	2	22
Hexachloroethane	20.0	18.7		ug/L		93	55 - 120	3	32
Isophorone	20.0	19.2		ug/L		96	47 - 180	1	56
Nitrobenzene	20.0	19.1		ug/L		96	54 - 158	4	37
N-Nitrosodimethylamine	20.0	17.9		ug/L		90	20 - 120	20	21
N-Nitrosodi-n-propylamine	20.0	20.8		ug/L		104	14 - 198	1	52
N-Nitrosodiphenylamine	20.0	25.1		ug/L		126	65 - 133	4	20
Pentachlorophenol	20.0	19.5		ug/L		97	38 - 152	12	52
Phenol	20.0	10.2		ug/L		51	17 - 120	2	39

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol	*106*		*28 - 127*
2-Fluorobiphenyl (Surr)	*103*		*31 - 120*
2-Fluorophenol	*65*		*17 - 120*
Nitrobenzene-d5	*97*		*27 - 120*
Phenol-d6 (Surr)	*46*		*10 - 120*
p-Terphenyl-d14 (Surr)	*114*		*45 - 120*

Method: 608.3 - Organochlorine Pesticides in Water

Lab Sample ID: MB 570-296012/1-A
Matrix: Water
Analysis Batch: 296426

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296012

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0033	0.0031	ug/L		01/16/23 08:30	01/17/23 15:20	1
alpha-BHC	ND		0.0013	0.0012	ug/L		01/16/23 08:30	01/17/23 15:20	1
beta-BHC	ND		0.0050	0.0039	ug/L		01/16/23 08:30	01/17/23 15:20	1
delta-BHC	ND		0.0033	0.0020	ug/L		01/16/23 08:30	01/17/23 15:20	1
gamma-BHC (Lindane)	ND		0.0013	0.00066	ug/L		01/16/23 08:30	01/17/23 15:20	1
Chlordane (technical)	ND		0.033	0.026	ug/L		01/16/23 08:30	01/17/23 15:20	1
4,4'-DDD	ND		0.0067	0.0044	ug/L		01/16/23 08:30	01/17/23 15:20	1
4,4'-DDE	ND		0.0033	0.0019	ug/L		01/16/23 08:30	01/17/23 15:20	1
4,4'-DDT	ND		0.0033	0.0016	ug/L		01/16/23 08:30	01/17/23 15:20	1
Dieldrin	ND		0.0033	0.0013	ug/L		01/16/23 08:30	01/17/23 15:20	1

Method: 608.3 - Organochlorine Pesticides in Water (Continued)

Lab Sample ID: MB 570-296012/1-A
Matrix: Water
Analysis Batch: 296426

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296012

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endosulfan I	ND		0.0013	0.0013	ug/L		01/16/23 08:30	01/17/23 15:20	1
Endosulfan II	ND		0.0067	0.0041	ug/L		01/16/23 08:30	01/17/23 15:20	1
Endosulfan sulfate	ND		0.0033	0.0014	ug/L		01/16/23 08:30	01/17/23 15:20	1
Endrin	ND		0.0033	0.0023	ug/L		01/16/23 08:30	01/17/23 15:20	1
Endrin aldehyde	ND		0.033	0.024	ug/L		01/16/23 08:30	01/17/23 15:20	1
Heptachlor	ND		0.0013	0.0012	ug/L		01/16/23 08:30	01/17/23 15:20	1
Heptachlor epoxide	ND		0.0067	0.0039	ug/L		01/16/23 08:30	01/17/23 15:20	1
Toxaphene	ND		0.067	0.054	ug/L		01/16/23 08:30	01/17/23 15:20	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*98*	*PI*	*20 - 139*	*01/16/23 08:30*	*01/17/23 15:20*	*1*

Lab Sample ID: LCS 570-296012/2-A
Matrix: Water
Analysis Batch: 296426

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296012

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aldrin	0.0333	0.0234		ug/L		70	42 - 140
alpha-BHC	0.0333	0.0268		ug/L		80	37 - 140
beta-BHC	0.0333	0.0370		ug/L		111	17 - 147
delta-BHC	0.0333	0.0307	PI	ug/L		92	19 - 140
gamma-BHC (Lindane)	0.0333	0.0325		ug/L		97	32 - 140
4,4'-DDD	0.0333	0.0381		ug/L		114	31 - 141
4,4'-DDE	0.0333	0.0365		ug/L		110	30 - 145
4,4'-DDT	0.0333	0.0376		ug/L		113	25 - 160
Dieldrin	0.0333	0.0305		ug/L		92	36 - 146
Endosulfan I	0.0333	0.0260	PI	ug/L		78	45 - 153
Endosulfan II	0.0333	0.0346		ug/L		104	1 - 202
Endosulfan sulfate	0.0333	0.0318	PI	ug/L		96	26 - 144
Endrin	0.0333	0.0348		ug/L		104	30 - 147
Endrin aldehyde	0.0333	ND		ug/L		56	50 - 135
Heptachlor	0.0333	0.0314		ug/L		94	34 - 140
Heptachlor epoxide	0.0333	0.0300		ug/L		90	37 - 142

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*62*	*PI*	*20 - 139*

Lab Sample ID: LCSD 570-296012/3-A
Matrix: Water
Analysis Batch: 296426

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296012

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aldrin	0.0333	0.0220		ug/L		66	42 - 140	6	35
alpha-BHC	0.0333	0.0241		ug/L		72	37 - 140	11	36
beta-BHC	0.0333	0.0370		ug/L		111	17 - 147	0	44
delta-BHC	0.0333	0.0278	PI	ug/L		83	19 - 140	10	52
gamma-BHC (Lindane)	0.0333	0.0307		ug/L		92	32 - 140	6	39
4,4'-DDD	0.0333	0.0344		ug/L		103	31 - 141	10	39

Method: 608.3 - Organochlorine Pesticides in Water (Continued)

Lab Sample ID: LCSD 570-296012/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 296426
Prep Batch: 296012

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
4,4'-DDE			0.0333	0.0358		ug/L		107	30 - 145	2	35
4,4'-DDT			0.0333	0.0359		ug/L		108	25 - 160	5	42
Dieldrin			0.0333	0.0290		ug/L		87	36 - 146	5	49
Endosulfan I			0.0333	0.0242	PI	ug/L		73	45 - 153	7	28
Endosulfan II			0.0333	0.0325		ug/L		98	1 - 202	6	53
Endosulfan sulfate			0.0333	0.0300	PI	ug/L		90	26 - 144	6	38
Endrin			0.0333	0.0326		ug/L		98	30 - 147	7	48
Endrin aldehyde			0.0333	ND		ug/L		56	50 - 135	2	30
Heptachlor			0.0333	0.0291		ug/L		87	34 - 140	8	43
Heptachlor epoxide			0.0333	0.0288		ug/L		86	37 - 142	4	26

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*50*	*PI*	*20 - 139*

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 570-296012/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 297231
Prep Batch: 296012

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.10	0.044	ug/L		01/16/23 08:30	01/20/23 05:32	1
Aroclor 1221	ND		0.10	0.044	ug/L		01/16/23 08:30	01/20/23 05:32	1
Aroclor 1232	ND		0.10	0.044	ug/L		01/16/23 08:30	01/20/23 05:32	1
Aroclor 1242	ND		0.10	0.044	ug/L		01/16/23 08:30	01/20/23 05:32	1
Aroclor 1248	ND		0.10	0.044	ug/L		01/16/23 08:30	01/20/23 05:32	1
Aroclor 1254	ND		0.10	0.052	ug/L		01/16/23 08:30	01/20/23 05:32	1
Aroclor 1260	ND		0.10	0.052	ug/L		01/16/23 08:30	01/20/23 05:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*71*	*PI*	*20 - 154*	*01/16/23 08:30*	*01/20/23 05:32*	*1*

Lab Sample ID: LCS 570-296012/4-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 297231
Prep Batch: 296012

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aroclor 1016			0.133	0.390	PI LQ	ug/L		292	50 - 140
Aroclor 1260			0.133	0.227	PI LQ	ug/L		170	8 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*80*	*PI*	*20 - 154*

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

Lab Sample ID: LCSD 570-296012/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 297231 — **Prep Batch: 296012**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aroclor 1016			0.133	0.469	PI LQ	ug/L		352	50 - 140	19	36
Aroclor 1260			0.133	0.220	PI LQ	ug/L		165	8 - 140	3	38

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*86*	*PI*	*20 - 154*

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 570-294983/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 294983

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		0.20	0.019	ug/L			01/11/23 02:23	1

Lab Sample ID: LCS 570-294983/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 294983

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chromium, hexavalent			50.1	50.5		ug/L		101	95 - 107		

Lab Sample ID: LCSD 570-294983/6 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 294983

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chromium, hexavalent			50.1	50.3		ug/L		100	95 - 107	0	20

Lab Sample ID: 570-123391-2 MS — **Client Sample ID: Outfall011_20230110_Comp**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 294983

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chromium, hexavalent	0.067	J,DX	50.1	52.3		ug/L		104	85 - 121		

Lab Sample ID: 570-123391-2 MSD — **Client Sample ID: Outfall011_20230110_Comp**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 294983

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chromium, hexavalent	0.067	J,DX	50.1	52.5		ug/L		105	85 - 121	0	25

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-294998/5
Matrix: Water
Analysis Batch: 294998

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			01/11/23 07:57	1
Nitrate as N	ND		0.10	0.020	mg/L			01/11/23 07:57	1

Lab Sample ID: LCS 570-294998/6
Matrix: Water
Analysis Batch: 294998

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrite as N			2.50	2.59		mg/L		104	90 - 110		
Nitrate as N			5.00	4.91		mg/L		98	90 - 110		

Lab Sample ID: LCSD 570-294998/7
Matrix: Water
Analysis Batch: 294998

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N			2.50	2.59		mg/L		104	90 - 110	0	15
Nitrate as N			5.00	4.92		mg/L		98	90 - 110	0	15

Lab Sample ID: 570-123391-2 MS
Matrix: Water
Analysis Batch: 294998

Client Sample ID: Outfall011_20230110_Comp
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrite as N	0.15		2.50	2.75		mg/L		104	80 - 120		
Nitrate as N	1.3		5.00	6.54		mg/L		104	80 - 120		

Lab Sample ID: 570-123391-2 MSD
Matrix: Water
Analysis Batch: 294998

Client Sample ID: Outfall011_20230110_Comp
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	0.15		2.50	2.74		mg/L		103	80 - 120	0	20
Nitrate as N	1.3		5.00	6.52		mg/L		104	80 - 120	0	20

Lab Sample ID: MB 570-294999/5
Matrix: Water
Analysis Batch: 294999

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			01/11/23 07:57	1
Fluoride	ND		0.10	0.046	mg/L			01/11/23 07:57	1
Sulfate	ND		1.0	0.24	mg/L			01/11/23 07:57	1

Lab Sample ID: LCS 570-294999/6
Matrix: Water
Analysis Batch: 294999

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			50.0	49.3		mg/L		99	90 - 110		

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 570-294999/6
Matrix: Water
Analysis Batch: 294999

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.50	2.52		mg/L		101	90 - 110
Sulfate	50.0	49.1		mg/L		98	90 - 110

Lab Sample ID: LCSD 570-294999/7
Matrix: Water
Analysis Batch: 294999

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	49.3		mg/L		99	90 - 110	0	15
Fluoride	2.50	2.53		mg/L		101	90 - 110	0	15
Sulfate	50.0	49.2		mg/L		98	90 - 110	0	15

Lab Sample ID: 570-123391-2 MS
Matrix: Water
Analysis Batch: 294999

Client Sample ID: Outfall011_20230110_Comp
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	30		50.0	87.5		mg/L		116	80 - 120
Fluoride	0.11		2.50	2.80		mg/L		107	80 - 120
Sulfate	10		50.0	63.3		mg/L		106	80 - 120

Lab Sample ID: 570-123391-2 MSD
Matrix: Water
Analysis Batch: 294999

Client Sample ID: Outfall011_20230110_Comp
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	30		50.0	87.5		mg/L		116	80 - 120	0	20
Fluoride	0.11		2.50	2.79		mg/L		107	80 - 120	0	20
Sulfate	10		50.0	63.2		mg/L		106	80 - 120	0	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-295096/7
Matrix: Water
Analysis Batch: 295096

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/11/23 14:04	1

Lab Sample ID: LCS 570-295096/8
Matrix: Water
Analysis Batch: 295096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	23.3		ug/L		93	85 - 115

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: LCSD 570-295096/9
Matrix: Water
Analysis Batch: 295096

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	23.6		ug/L		95	85 - 115	2	15

Lab Sample ID: 570-123414-E-1 MS
Matrix: Water
Analysis Batch: 295096

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	ND		50.0	47.4		ug/L		95	80 - 120		

Lab Sample ID: 570-123414-E-1 MSD
Matrix: Water
Analysis Batch: 295096

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	ND		50.0	47.1		ug/L		94	80 - 120	1	15

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-296315/1-A
Matrix: Water
Analysis Batch: 296531

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 296315

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L		01/17/23 06:17	01/17/23 15:29	1

Lab Sample ID: LCS 570-296315/2-A
Matrix: Water
Analysis Batch: 296531

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 296315

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			500	507		ug/L		101	85 - 115		

Lab Sample ID: LCSD 570-296315/3-A
Matrix: Water
Analysis Batch: 296531

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 296315

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	503		ug/L		101	85 - 115	1	20

Lab Sample ID: 570-123391-2 MS
Matrix: Water
Analysis Batch: 296531

Client Sample ID: Outfall011_20230110_Comp
Prep Type: Total Recoverable
Prep Batch: 296315

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron	64	J,DX	500	567		ug/L		101	80 - 120		

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 570-123391-2 MSD
Client Sample ID: Outfall011_20230110_Comp
Matrix: Water
Prep Type: Total Recoverable
Analysis Batch: 296531
Prep Batch: 296315

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	64	J,DX	500	560		ug/L		99	80 - 120	1	20

Lab Sample ID: MB 570-295505/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 295884

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L			01/13/23 18:22	1

Lab Sample ID: LCS 570-295505/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 295884

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	500	470	J,DX	ug/L		94	85 - 115

Lab Sample ID: LCSD 570-295505/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 295884

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	500	472	J,DX	ug/L		94	85 - 115	0	20

Lab Sample ID: 570-123414-C-3-D MSD
Client Sample ID: Matrix Spike Duplicate
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 295884

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	52	J,DX	500	527		ug/L		95	80 - 120	0	20

Lab Sample ID: 570-123414-C-3-E MS
Client Sample ID: Matrix Spike
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 295884

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	52	J,DX	500	526		ug/L		95	80 - 120

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-295623/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total Recoverable
Analysis Batch: 295781
Prep Batch: 295623

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0	0.36	ug/L		01/13/23 08:13	01/13/23 13:51	1
Cadmium	ND		1.0	0.13	ug/L		01/13/23 08:13	01/13/23 13:51	1
Copper	ND		2.0	0.32	ug/L		01/13/23 08:13	01/13/23 13:51	1
Lead	ND		1.0	0.12	ug/L		01/13/23 08:13	01/13/23 13:51	1
Selenium	ND		2.0	0.52	ug/L		01/13/23 08:13	01/13/23 13:51	1
Silver	ND		1.0	0.23	ug/L		01/13/23 08:13	01/13/23 13:51	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-295623/1-A
Matrix: Water
Analysis Batch: 295781

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 295623

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	ND		1.0	0.11	ug/L		01/13/23 08:13	01/13/23 13:51	1
Beryllium	ND		0.50	0.26	ug/L		01/13/23 08:13	01/13/23 13:51	1
Barium	ND		1.0	0.17	ug/L		01/13/23 08:13	01/13/23 13:51	1
Iron	ND		20	3.7	ug/L		01/13/23 08:13	01/13/23 13:51	1
Nickel	ND		2.0	0.17	ug/L		01/13/23 08:13	01/13/23 13:51	1
Vanadium	ND		2.0	0.17	ug/L		01/13/23 08:13	01/13/23 13:51	1
Arsenic	ND		1.0	0.16	ug/L		01/13/23 08:13	01/13/23 13:51	1
Zinc	ND		20	2.8	ug/L		01/13/23 08:13	01/13/23 13:51	1
Manganese	ND		1.0	0.41	ug/L		01/13/23 08:13	01/13/23 13:51	1
Chromium	ND		2.0	0.14	ug/L		01/13/23 08:13	01/13/23 13:51	1
Cobalt	ND		1.0	0.14	ug/L		01/13/23 08:13	01/13/23 13:51	1

Lab Sample ID: LCS 570-295623/2-A
Matrix: Water
Analysis Batch: 295781

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 295623

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	100	86.7		ug/L		87	85 - 115
Cadmium	100	99.9		ug/L		100	85 - 115
Copper	100	107		ug/L		107	85 - 115
Lead	100	101		ug/L		101	85 - 115
Selenium	100	99.1		ug/L		99	85 - 115
Silver	50.0	49.4		ug/L		99	85 - 115
Thallium	100	100		ug/L		100	85 - 115
Beryllium	100	100		ug/L		100	85 - 115
Barium	100	99.8		ug/L		100	85 - 115
Iron	100	107		ug/L		107	85 - 115
Nickel	100	101		ug/L		101	85 - 115
Vanadium	100	99.4		ug/L		99	85 - 115
Arsenic	100	97.9		ug/L		98	85 - 115
Zinc	100	102		ug/L		102	85 - 115
Manganese	100	102		ug/L		102	85 - 115
Chromium	100	101		ug/L		101	85 - 115
Cobalt	100	99.7		ug/L		100	85 - 115

Lab Sample ID: LCSD 570-295623/3-A
Matrix: Water
Analysis Batch: 295781

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 295623

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	100	92.2		ug/L		92	85 - 115	6	20
Cadmium	100	103		ug/L		103	85 - 115	3	20
Copper	100	107		ug/L		107	85 - 115	0	20
Lead	100	104		ug/L		104	85 - 115	3	20
Selenium	100	102		ug/L		102	85 - 115	3	20
Silver	50.0	51.4		ug/L		103	85 - 115	4	20
Thallium	100	104		ug/L		104	85 - 115	4	20
Beryllium	100	107		ug/L		107	85 - 115	6	20
Barium	100	104		ug/L		104	85 - 115	4	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-295623/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total Recoverable
Analysis Batch: 295781
Prep Batch: 295623

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Iron			100	113		ug/L		113	85 - 115	6	20
Nickel			100	106		ug/L		106	85 - 115	4	20
Vanadium			100	104		ug/L		104	85 - 115	4	20
Arsenic			100	101		ug/L		101	85 - 115	3	20
Zinc			100	103		ug/L		103	85 - 115	2	20
Manganese			100	105		ug/L		105	85 - 115	3	20
Chromium			100	104		ug/L		104	85 - 115	3	20
Cobalt			100	104		ug/L		104	85 - 115	4	20

Lab Sample ID: 570-123393-D-1-F MS
Client Sample ID: Matrix Spike
Matrix: Water
Prep Type: Total Recoverable
Analysis Batch: 295781
Prep Batch: 295623

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.85	J,DX	100	98.9		ug/L		98	80 - 120
Cadmium	ND		100	99.6		ug/L		100	80 - 120
Copper	4.4		100	107		ug/L		103	80 - 120
Lead	1.2		100	101		ug/L		100	80 - 120
Selenium	ND		100	93.4		ug/L		93	80 - 120
Silver	ND		50.0	49.5		ug/L		99	80 - 120
Thallium	ND		100	101		ug/L		101	80 - 120
Beryllium	ND		100	101		ug/L		101	80 - 120
Barium	11		100	111		ug/L		100	80 - 120
Iron	240		100	375	LM	ug/L		132	80 - 120
Nickel	1.6	J,DX	100	102		ug/L		101	80 - 120
Vanadium	1.3	J,DX	100	101		ug/L		100	80 - 120
Arsenic	0.78	J,DX	100	98.6		ug/L		98	80 - 120
Zinc	9.3	J,DX	100	103		ug/L		94	80 - 120
Manganese	6.4		100	109		ug/L		103	80 - 120
Chromium	0.75	J,DX	100	101		ug/L		100	80 - 120
Cobalt	0.20	J,DX	100	100		ug/L		100	80 - 120

Lab Sample ID: 570-123393-D-1-G MSD
Client Sample ID: Matrix Spike Duplicate
Matrix: Water
Prep Type: Total Recoverable
Analysis Batch: 295781
Prep Batch: 295623

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	0.85	J,DX	100	98.9		ug/L		98	80 - 120	0	20
Cadmium	ND		100	100		ug/L		100	80 - 120	0	20
Copper	4.4		100	106		ug/L		102	80 - 120	1	20
Lead	1.2		100	102		ug/L		101	80 - 120	0	20
Selenium	ND		100	97.8		ug/L		98	80 - 120	5	20
Silver	ND		50.0	49.6		ug/L		99	80 - 120	0	20
Thallium	ND		100	101		ug/L		101	80 - 120	1	20
Beryllium	ND		100	101		ug/L		101	80 - 120	0	20
Barium	11		100	112		ug/L		101	80 - 120	1	20
Iron	240		100	399	LM	ug/L		157	80 - 120	6	20
Nickel	1.6	J,DX	100	102		ug/L		100	80 - 120	1	20
Vanadium	1.3	J,DX	100	101		ug/L		99	80 - 120	1	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-123393-D-1-G MSD
Matrix: Water
Analysis Batch: 295781

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 295623

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.78	J,DX	100	97.4		ug/L		97	80 - 120	1	20
Zinc	9.3	J,DX	100	105		ug/L		96	80 - 120	2	20
Manganese	6.4		100	108		ug/L		102	80 - 120	1	20
Chromium	0.75	J,DX	100	100		ug/L		99	80 - 120	1	20
Cobalt	0.20	J,DX	100	99.7		ug/L		100	80 - 120	1	20

Lab Sample ID: MB 570-295400/1-A
Matrix: Water
Analysis Batch: 295684

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0	0.36	ug/L			01/13/23 10:03	1
Cadmium	ND		1.0	0.13	ug/L			01/13/23 10:03	1
Copper	ND		2.0	0.32	ug/L			01/13/23 10:03	1
Lead	ND		1.0	0.12	ug/L			01/13/23 10:03	1
Selenium	ND		2.0	0.52	ug/L			01/13/23 10:03	1
Silver	ND		1.0	0.23	ug/L			01/13/23 10:03	1
Thallium	ND		1.0	0.11	ug/L			01/13/23 10:03	1
Beryllium	ND		0.50	0.26	ug/L			01/13/23 10:03	1
Barium	ND		1.0	0.17	ug/L			01/13/23 10:03	1
Iron	ND		20	3.7	ug/L			01/13/23 10:03	1
Nickel	ND		2.0	0.17	ug/L			01/13/23 10:03	1
Vanadium	ND		2.0	0.17	ug/L			01/13/23 10:03	1
Arsenic	ND		1.0	0.16	ug/L			01/13/23 10:03	1
Zinc	2.95	J,DX	20	2.8	ug/L			01/13/23 10:03	1
Manganese	ND		1.0	0.41	ug/L			01/13/23 10:03	1
Chromium	ND		2.0	0.14	ug/L			01/13/23 10:03	1
Cobalt	ND		1.0	0.14	ug/L			01/13/23 10:03	1

Lab Sample ID: LCS 570-295400/2-A
Matrix: Water
Analysis Batch: 295684

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	80.0	80.0		ug/L		100	85 - 115
Cadmium	80.0	80.8		ug/L		101	85 - 115
Copper	80.0	82.0		ug/L		102	85 - 115
Lead	80.0	80.6		ug/L		101	85 - 115
Selenium	80.0	77.7		ug/L		97	85 - 115
Silver	80.0	81.0		ug/L		101	85 - 115
Thallium	80.0	81.0		ug/L		101	85 - 115
Beryllium	80.0	83.0		ug/L		104	85 - 115
Barium	80.0	79.8		ug/L		100	85 - 115
Iron	800	813		ug/L		102	85 - 115
Nickel	80.0	80.9		ug/L		101	85 - 115
Vanadium	80.0	79.7		ug/L		100	85 - 115
Arsenic	80.0	79.0		ug/L		99	85 - 115
Zinc	80.0	79.0		ug/L		99	85 - 115
Manganese	80.0	81.4		ug/L		102	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-295400/2-A
Matrix: Water
Analysis Batch: 295684

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chromium			80.0	80.5		ug/L		101	85 - 115		
Cobalt			80.0	80.9		ug/L		101	85 - 115		

Lab Sample ID: LCSD 570-295400/3-A
Matrix: Water
Analysis Batch: 295684

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony			80.0	81.1		ug/L		101	85 - 115	1	20
Cadmium			80.0	80.9		ug/L		101	85 - 115	0	20
Copper			80.0	83.1		ug/L		104	85 - 115	1	20
Lead			80.0	82.7		ug/L		103	85 - 115	3	20
Selenium			80.0	77.3		ug/L		97	85 - 115	1	20
Silver			80.0	80.8		ug/L		101	85 - 115	0	20
Thallium			80.0	83.7		ug/L		105	85 - 115	3	20
Beryllium			80.0	80.3		ug/L		100	85 - 115	3	20
Barium			80.0	80.0		ug/L		100	85 - 115	0	20
Iron			800	813		ug/L		102	85 - 115	0	20
Nickel			80.0	81.5		ug/L		102	85 - 115	1	20
Vanadium			80.0	80.1		ug/L		100	85 - 115	1	20
Arsenic			80.0	77.8		ug/L		97	85 - 115	2	20
Zinc			80.0	79.0		ug/L		99	85 - 115	0	20
Manganese			80.0	81.7		ug/L		102	85 - 115	0	20
Chromium			80.0	80.2		ug/L		100	85 - 115	0	20
Cobalt			80.0	81.3		ug/L		102	85 - 115	1	20

Lab Sample ID: 570-123391-1 MS
Matrix: Water
Analysis Batch: 295684

Client Sample ID: Outfall011_20230110_Comp_F
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Antimony	0.62	J,DX BU	40.0	35.7		ug/L		88	80 - 120		
Cadmium	ND	BU	40.0	39.1		ug/L		98	80 - 120		
Copper	5.9	BU	40.0	45.8		ug/L		100	80 - 120		
Lead	ND	BU	40.0	39.6		ug/L		99	80 - 120		
Selenium	0.65	J,DX BU	40.0	38.2		ug/L		94	80 - 120		
Silver	ND	BU	20.0	19.1		ug/L		96	80 - 120		
Thallium	ND	BU	40.0	39.8		ug/L		99	80 - 120		
Beryllium	ND	BU	40.0	40.1		ug/L		100	80 - 120		
Barium	11	BU	40.0	51.1		ug/L		99	80 - 120		
Iron	53	BU	40.0	92.9		ug/L		100	80 - 120		
Nickel	1.7	J,DX BU	40.0	41.3		ug/L		99	80 - 120		
Vanadium	1.1	J,DX BU	40.0	40.6		ug/L		99	80 - 120		
Arsenic	1.2	BU	40.0	39.8		ug/L		96	80 - 120		
Zinc	13	J,DX BU MB	40.0	49.8		ug/L		93	80 - 120		
Manganese	25	BU	40.0	65.2		ug/L		100	80 - 120		
Chromium	0.65	J,DX BU	40.0	40.1		ug/L		99	80 - 120		
Cobalt	ND	BU	40.0	39.5		ug/L		99	80 - 120		

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-123391-1 MSD
Matrix: Water
Analysis Batch: 295684

Client Sample ID: Outfall011_20230110_Comp_F
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	0.62	J,DX BU	40.0	35.9		ug/L		88	80 - 120	1	20
Cadmium	ND	BU	40.0	38.2		ug/L		96	80 - 120	2	20
Copper	5.9	BU	40.0	44.8		ug/L		97	80 - 120	2	20
Lead	ND	BU	40.0	38.5		ug/L		96	80 - 120	3	20
Selenium	0.65	J,DX BU	40.0	37.1		ug/L		91	80 - 120	3	20
Silver	ND	BU	20.0	18.6		ug/L		93	80 - 120	3	20
Thallium	ND	BU	40.0	38.8		ug/L		97	80 - 120	3	20
Beryllium	ND	BU	40.0	37.8		ug/L		94	80 - 120	6	20
Barium	11	BU	40.0	50.0		ug/L		97	80 - 120	2	20
Iron	53	BU	40.0	88.4		ug/L		88	80 - 120	5	20
Nickel	1.7	J,DX BU	40.0	40.2		ug/L		96	80 - 120	2	20
Vanadium	1.1	J,DX BU	40.0	39.6		ug/L		96	80 - 120	2	20
Arsenic	1.2	BU	40.0	38.8		ug/L		94	80 - 120	3	20
Zinc	13	J,DX BU MB	40.0	47.3		ug/L		87	80 - 120	5	20
Manganese	25	BU	40.0	62.8		ug/L		94	80 - 120	4	20
Chromium	0.65	J,DX BU	40.0	38.8		ug/L		95	80 - 120	3	20
Cobalt	ND	BU	40.0	38.4		ug/L		96	80 - 120	3	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-295795/1-A
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 295795

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		01/13/23 16:10	01/16/23 18:50	1

Lab Sample ID: LCS 570-295795/2-A
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 295795

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	8.51		ug/L		106	85 - 115

Lab Sample ID: LCSD 570-295795/3-A
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 295795

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	8.00	8.65		ug/L		108	85 - 115	2	10

Lab Sample ID: 570-123545-A-2-C MS
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 295795

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		8.00	8.68		ug/L		108	85 - 115

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: 570-123545-A-2-D MSD
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 295795

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		8.00	8.57		ug/L		107	85 - 115	1	10

Lab Sample ID: MB 570-295217/1-B
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 295283

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		01/11/23 18:15	01/16/23 17:29	1

Lab Sample ID: LCS 570-295217/2-B
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 295283

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	8.65		ug/L		108	85 - 115

Lab Sample ID: LCSD 570-295217/3-B
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 295283

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	8.00	8.54		ug/L		107	85 - 115	1	10

Lab Sample ID: 570-123377-B-1-E MS
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 295283

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		8.00	8.08		ug/L		101	85 - 115

Lab Sample ID: 570-123377-B-1-F MSD
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 295283

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		8.00	8.45		ug/L		106	85 - 115	4	10

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-297466/5-A
Matrix: Water
Analysis Batch: 297482

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 297466

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		01/20/23 12:20	01/20/23 14:06	1

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: LCS 570-297466/6-A
Matrix: Water
Analysis Batch: 297482

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 297466

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Ammonia			0.500	0.492		mg/L		98	90 - 110		

Lab Sample ID: LCSD 570-297466/7-A
Matrix: Water
Analysis Batch: 297482

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 297466

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia			0.500	0.497		mg/L		99	90 - 110	1	20

Lab Sample ID: 380-33593-B-1-A MS
Matrix: Water
Analysis Batch: 297482

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 297466

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Ammonia	0.041	J,DX	0.500	0.526		mg/L		97	90 - 110		

Lab Sample ID: 380-33593-B-1-B MSD
Matrix: Water
Analysis Batch: 297482

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 297466

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	0.041	J,DX	0.500	0.515		mg/L		95	90 - 110	2	25

Lab Sample ID: 570-123567-G-2-C DU
Matrix: Water
Analysis Batch: 297482

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 297466

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Ammonia	0.085			0.0827		mg/L				2	25

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-295446/11
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			01/11/23 14:55	1

Lab Sample ID: LCS 570-295446/12
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total			250	255		ug/L		102	90 - 110		

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate (Continued)

Lab Sample ID: LCSD 570-295446/18
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	250	233		ug/L		93	90 - 110	9	20

Lab Sample ID: MRL 570-295446/10
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	4.11	J,DX	ug/L		82	50 - 150

Lab Sample ID: 570-122475-D-1 MS
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	8.7		250	226		ug/L		87	70 - 130

Lab Sample ID: 570-122475-D-1 MSD
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	8.7		250	266		ug/L		103	70 - 130	16	30

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-295186/1
Matrix: Water
Analysis Batch: 295186

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	1000	1000		NTU		100.2	99.0 - 101.0

Lab Sample ID: LCSSRM 570-295186/2
Matrix: Water
Analysis Batch: 295186

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	10.0	10		NTU		101.0	99.0 - 101.0

Lab Sample ID: LCSSRM 570-295186/3
Matrix: Water
Analysis Batch: 295186

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Method: SM 2130B - Turbidity (Continued)

Lab Sample ID: 570-123414-B-1 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 295186

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Turbidity	4.7			4.7		NTU				0.2	25

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-295157/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 295157

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			01/11/23 14:00	1

Lab Sample ID: LCS 570-295157/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 295157

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			1000	1060		mg/L		106	84 - 108		

Lab Sample ID: LCSD 570-295157/3 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 295157

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids			1000	996		mg/L		100	84 - 108	6	10

Lab Sample ID: 570-123260-I-1 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 295157

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	5400			5350		mg/L				2	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-296165/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 296165

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/16/23 13:12	1

Lab Sample ID: LCS 570-296165/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 296165

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	92.0		mg/L		92	77 - 116		

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCSD 570-296165/3
Matrix: Water
Analysis Batch: 296165

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	87.0		mg/L		87	77 - 116	6	10

Lab Sample ID: 570-123539-B-1 DU
Matrix: Water
Analysis Batch: 296165

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	11			16.4		mg/L				38	10

Method: SM 5310D - Organic Carbon, Total (TOC)

Lab Sample ID: MB 570-296081/4
Matrix: Water
Analysis Batch: 296081

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon, Total Organic	ND		0.50	0.26	mg/L			01/13/23 15:14	1

Lab Sample ID: LCS 570-296081/5
Matrix: Water
Analysis Batch: 296081

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Carbon, Total Organic			5.03	5.01		mg/L		100	85 - 115		

Lab Sample ID: LCSD 570-296081/6
Matrix: Water
Analysis Batch: 296081

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon, Total Organic			5.03	5.06		mg/L		101	85 - 115	1	20

Lab Sample ID: 570-123428-H-1 MS
Matrix: Water
Analysis Batch: 296081

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Carbon, Total Organic	2.7		5.03	7.45		mg/L		95	31 - 145		

Lab Sample ID: 570-123428-H-1 MSD
Matrix: Water
Analysis Batch: 296081

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon, Total Organic	2.7		5.03	7.44		mg/L		95	31 - 145	0	20

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-295142/5-A
Matrix: Water
Analysis Batch: 294924

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 295142

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.30	0.054	mg/L		01/10/23 15:00	01/10/23 16:43	1

Lab Sample ID: LCS 570-295142/6-A
Matrix: Water
Analysis Batch: 294924

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 295142

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
MBAS	1.00	1.05		mg/L		105	85 - 111

Lab Sample ID: LCSD 570-295142/7-A
Matrix: Water
Analysis Batch: 294924

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 295142

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS	1.00	1.02		mg/L		102	85 - 111	3	7

Lab Sample ID: 570-123251-A-1-B MS
Matrix: Water
Analysis Batch: 294924

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 295142

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
MBAS	0.12	J,DX	1.00	1.35		mg/L		124	75 - 125

Lab Sample ID: 570-123251-A-1-C MSD
Matrix: Water
Analysis Batch: 294924

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 295142

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS	0.12	J,DX	1.00	1.36		mg/L		124	75 - 125	0	12

Method: SM5210B - BOD, 5 Day

Lab Sample ID: USB 570-296379/2
Matrix: Water
Analysis Batch: 296379

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L			01/11/23 08:04	1

Lab Sample ID: LCS 570-296379/4
Matrix: Water
Analysis Batch: 296379

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	199	176		mg/L		89	84.6 - 115.4

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: SM5210B - BOD, 5 Day (Continued)

Lab Sample ID: 570-123605-A-1 DU
Matrix: Water
Analysis Batch: 296379

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Biochemical Oxygen Demand	1900			1990		mg/L				6	25

GC/MS VOA

Analysis Batch: 295319

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	8260B SIM	
MB 570-295319/7	Method Blank	Total/NA	Water	8260B SIM	
LCS 570-295319/4	Lab Control Sample	Total/NA	Water	8260B SIM	
LCSD 570-295319/5	Lab Control Sample Dup	Total/NA	Water	8260B SIM	
570-123511-B-2 MS	Matrix Spike	Total/NA	Water	8260B SIM	
570-123511-B-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

GC/MS Semi VOA

Prep Batch: 296163

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	625	
MB 570-296163/1-A	Method Blank	Total/NA	Water	625	
LCS 570-296163/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-296163/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 298493

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-296163/1-A	Method Blank	Total/NA	Water	625.1 SIM	296163
LCS 570-296163/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	296163
LCSD 570-296163/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	296163

Analysis Batch: 299894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	625.1 SIM	296163

GC Semi VOA

Prep Batch: 296012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	608	
MB 570-296012/1-A	Method Blank	Total/NA	Water	608	
LCS 570-296012/2-A	Lab Control Sample	Total/NA	Water	608	
LCS 570-296012/4-A	Lab Control Sample	Total/NA	Water	608	
LCSD 570-296012/3-A	Lab Control Sample Dup	Total/NA	Water	608	
LCSD 570-296012/5-A	Lab Control Sample Dup	Total/NA	Water	608	

Analysis Batch: 296426

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-296012/1-A	Method Blank	Total/NA	Water	608.3	296012
LCS 570-296012/2-A	Lab Control Sample	Total/NA	Water	608.3	296012
LCSD 570-296012/3-A	Lab Control Sample Dup	Total/NA	Water	608.3	296012

Analysis Batch: 296909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	608.3	296012

Analysis Batch: 297231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-296012/1-A	Method Blank	Total/NA	Water	608.3	296012
LCS 570-296012/4-A	Lab Control Sample	Total/NA	Water	608.3	296012
LCSD 570-296012/5-A	Lab Control Sample Dup	Total/NA	Water	608.3	296012

GC Semi VOA

Analysis Batch: 297704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	608.3	296012

HPLC/IC

Analysis Batch: 294983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	218.6	
MB 570-294983/4	Method Blank	Total/NA	Water	218.6	
LCS 570-294983/5	Lab Control Sample	Total/NA	Water	218.6	
LCSD 570-294983/6	Lab Control Sample Dup	Total/NA	Water	218.6	
570-123391-2 MS	Outfall011_20230110_Comp	Total/NA	Water	218.6	
570-123391-2 MSD	Outfall011_20230110_Comp	Total/NA	Water	218.6	

Analysis Batch: 294998

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	300.0	
MB 570-294998/5	Method Blank	Total/NA	Water	300.0	
LCS 570-294998/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-294998/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-123391-2 MS	Outfall011_20230110_Comp	Total/NA	Water	300.0	
570-123391-2 MSD	Outfall011_20230110_Comp	Total/NA	Water	300.0	

Analysis Batch: 294999

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	300.0	
MB 570-294999/5	Method Blank	Total/NA	Water	300.0	
LCS 570-294999/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-294999/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-123391-2 MS	Outfall011_20230110_Comp	Total/NA	Water	300.0	
570-123391-2 MSD	Outfall011_20230110_Comp	Total/NA	Water	300.0	

Analysis Batch: 295096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	314.0	
MB 570-295096/7	Method Blank	Total/NA	Water	314.0	
LCS 570-295096/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-295096/9	Lab Control Sample Dup	Total/NA	Water	314.0	
570-123414-E-1 MS	Matrix Spike	Total/NA	Water	314.0	
570-123414-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 295714

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	NO2NO3 Calc	

Metals

Analysis Batch: 294588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-1	Outfall011_20230110_Comp_F	Dissolved	Water	SM 2340B	
570-123391-2	Outfall011_20230110_Comp	Total Recoverable	Water	SM 2340B	

Metals

Filtration Batch: 295217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-1	Outfall011_20230110_Comp_F	Dissolved	Water	Filtration	
MB 570-295217/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-295217/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-295217/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-123377-B-1-E MS	Matrix Spike	Dissolved	Water	Filtration	
570-123377-B-1-F MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Prep Batch: 295283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-1	Outfall011_20230110_Comp_F	Dissolved	Water	245.1	295217
MB 570-295217/1-B	Method Blank	Dissolved	Water	245.1	295217
LCS 570-295217/2-B	Lab Control Sample	Dissolved	Water	245.1	295217
LCSD 570-295217/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	295217
570-123377-B-1-E MS	Matrix Spike	Dissolved	Water	245.1	295217
570-123377-B-1-F MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	295217

Filtration Batch: 295400

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-1	Outfall011_20230110_Comp_F	Dissolved	Water	Filtration	
MB 570-295400/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-295400/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-295400/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-123391-1 MS	Outfall011_20230110_Comp_F	Dissolved	Water	Filtration	
570-123391-1 MSD	Outfall011_20230110_Comp_F	Dissolved	Water	Filtration	

Filtration Batch: 295505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-1	Outfall011_20230110_Comp_F	Dissolved	Water	Filtration	
MB 570-295505/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-295505/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-295505/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-123414-C-3-D MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	
570-123414-C-3-E MS	Matrix Spike	Dissolved	Water	Filtration	

Prep Batch: 295623

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total Recoverable	Water	200.8	
MB 570-295623/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-295623/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-295623/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-123393-D-1-F MS	Matrix Spike	Total Recoverable	Water	200.8	
570-123393-D-1-G MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	

Analysis Batch: 295684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-1	Outfall011_20230110_Comp_F	Dissolved	Water	200.8	295400
MB 570-295400/1-A	Method Blank	Dissolved	Water	200.8	295400
LCS 570-295400/2-A	Lab Control Sample	Dissolved	Water	200.8	295400
LCSD 570-295400/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	295400
570-123391-1 MS	Outfall011_20230110_Comp_F	Dissolved	Water	200.8	295400
570-123391-1 MSD	Outfall011_20230110_Comp_F	Dissolved	Water	200.8	295400

Metals

Analysis Batch: 295781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total Recoverable	Water	200.8	295623
MB 570-295623/1-A	Method Blank	Total Recoverable	Water	200.8	295623
LCS 570-295623/2-A	Lab Control Sample	Total Recoverable	Water	200.8	295623
LCSD 570-295623/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	295623
570-123393-D-1-F MS	Matrix Spike	Total Recoverable	Water	200.8	295623
570-123393-D-1-G MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	295623

Prep Batch: 295795

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	245.1	
MB 570-295795/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-295795/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-295795/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
570-123545-A-2-C MS	Matrix Spike	Total/NA	Water	245.1	
570-123545-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	

Analysis Batch: 295884

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-1	Outfall011_20230110_Comp_F	Dissolved	Water	200.7 Rev 4.4	295505
MB 570-295505/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	295505
LCS 570-295505/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	295505
LCSD 570-295505/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	295505
570-123414-C-3-D MSD	Matrix Spike Duplicate	Dissolved	Water	200.7 Rev 4.4	295505
570-123414-C-3-E MS	Matrix Spike	Dissolved	Water	200.7 Rev 4.4	295505

Analysis Batch: 296261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-1	Outfall011_20230110_Comp_F	Dissolved	Water	245.1	295283
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	245.1	295795
MB 570-295217/1-B	Method Blank	Dissolved	Water	245.1	295283
MB 570-295795/1-A	Method Blank	Total/NA	Water	245.1	295795
LCS 570-295217/2-B	Lab Control Sample	Dissolved	Water	245.1	295283
LCS 570-295795/2-A	Lab Control Sample	Total/NA	Water	245.1	295795
LCSD 570-295217/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	295283
LCSD 570-295795/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	295795
570-123377-B-1-E MS	Matrix Spike	Dissolved	Water	245.1	295283
570-123377-B-1-F MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	295283
570-123545-A-2-C MS	Matrix Spike	Total/NA	Water	245.1	295795
570-123545-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	295795

Prep Batch: 296315

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total Recoverable	Water	200.7	
MB 570-296315/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 570-296315/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
LCSD 570-296315/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7	
570-123391-2 MS	Outfall011_20230110_Comp	Total Recoverable	Water	200.7	
570-123391-2 MSD	Outfall011_20230110_Comp	Total Recoverable	Water	200.7	

Metals

Analysis Batch: 296531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total Recoverable	Water	200.7 Rev 4.4	296315
MB 570-296315/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	296315
LCS 570-296315/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	296315
LCSD 570-296315/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	296315
570-123391-2 MS	Outfall011_20230110_Comp	Total Recoverable	Water	200.7 Rev 4.4	296315
570-123391-2 MSD	Outfall011_20230110_Comp	Total Recoverable	Water	200.7 Rev 4.4	296315

General Chemistry

Analysis Batch: 294924

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	SM 5540C	295142
MB 570-295142/5-A	Method Blank	Total/NA	Water	SM 5540C	295142
LCS 570-295142/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	295142
LCSD 570-295142/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	295142
570-123251-A-1-B MS	Matrix Spike	Total/NA	Water	SM 5540C	295142
570-123251-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5540C	295142

Prep Batch: 295142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	SM 5540C	
MB 570-295142/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-295142/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-295142/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	
570-123251-A-1-B MS	Matrix Spike	Total/NA	Water	SM 5540C	
570-123251-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5540C	

Analysis Batch: 295157

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	SM 2540C	
MB 570-295157/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-295157/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-295157/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
570-123260-I-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 295186

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	SM 2130B	
LCSSRM 570-295186/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-295186/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-295186/3	Lab Control Sample	Total/NA	Water	SM 2130B	
570-123414-B-1 DU	Duplicate	Total/NA	Water	SM 2130B	

Analysis Batch: 295446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	Kelada 01	
MB 570-295446/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-295446/12	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-295446/18	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-295446/10	Lab Control Sample	Total/NA	Water	Kelada 01	
570-122475-D-1 MS	Matrix Spike	Total/NA	Water	Kelada 01	

General Chemistry (Continued)

Analysis Batch: 295446 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122475-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	Kelada 01	

Analysis Batch: 296081

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	SM 5310D	
MB 570-296081/4	Method Blank	Total/NA	Water	SM 5310D	
LCS 570-296081/5	Lab Control Sample	Total/NA	Water	SM 5310D	
LCSD 570-296081/6	Lab Control Sample Dup	Total/NA	Water	SM 5310D	
570-123428-H-1 MS	Matrix Spike	Total/NA	Water	SM 5310D	
570-123428-H-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310D	

Analysis Batch: 296165

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	SM 2540D	
MB 570-296165/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-296165/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-296165/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-123539-B-1 DU	Duplicate	Total/NA	Water	SM 2540D	

Analysis Batch: 296379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	SM5210B	
USB 570-296379/2	Method Blank	Total/NA	Water	SM5210B	
LCS 570-296379/4	Lab Control Sample	Total/NA	Water	SM5210B	
570-123605-A-1 DU	Duplicate	Total/NA	Water	SM5210B	

Analysis Batch: 296555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	218.6 CR3	

Prep Batch: 297466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	Distill/Ammonia	
MB 570-297466/5-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-297466/6-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-297466/7-A	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	
380-33593-B-1-A MS	Matrix Spike	Total/NA	Water	Distill/Ammonia	
380-33593-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	Distill/Ammonia	
570-123567-G-2-C DU	Duplicate	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 297482

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	350.1	297466
MB 570-297466/5-A	Method Blank	Total/NA	Water	350.1	297466
LCS 570-297466/6-A	Lab Control Sample	Total/NA	Water	350.1	297466
LCSD 570-297466/7-A	Lab Control Sample Dup	Total/NA	Water	350.1	297466
380-33593-B-1-A MS	Matrix Spike	Total/NA	Water	350.1	297466
380-33593-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	297466
570-123567-G-2-C DU	Duplicate	Total/NA	Water	350.1	297466

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Client Sample ID: Outfall011_20230110_Comp_F
Lab Sample ID: 570-123391-1
Date Collected: 01/10/23 11:05
Matrix: Water
Date Received: 01/10/23 17:58

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	295505	01/12/23 16:24	W1BQ	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			295884	01/13/23 18:37	P1R	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	295400	01/12/23 15:37	W1BQ	EET CAL 4
Dissolved	Analysis	200.8		1			295684	01/13/23 10:18	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Dissolved	Filtration	Filtration			25 mL	50 mL	295217	01/11/23 17:44	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	295283	01/11/23 18:15	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			296261	01/16/23 17:52	C0YH	EET CAL 4
	Instrument ID: HG8									
Dissolved	Analysis	SM 2340B		1			294588	01/18/23 16:34	P1R	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: Outfall011_20230110_Comp
Lab Sample ID: 570-123391-2
Date Collected: 01/10/23 11:05
Matrix: Water
Date Received: 01/10/23 17:58

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B SIM		1	25 mL	25 mL	295319	01/12/23 13:32	U4JL	EET CAL 4
	Instrument ID: GCMSR									
Total/NA	Prep	625			1035.9 mL	2 mL	296163	01/17/23 05:12	OAJ3	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	299894	01/31/23 10:59	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Prep	608			1500 mL	1 mL	296012	01/17/23 08:00	OAJ3	EET CAL 4
Total/NA	Analysis	608.3		1	1 mL	1 mL	296909	01/19/23 13:07	N5Y3	EET CAL 4
	Instrument ID: GC52A									
Total/NA	Prep	608			1500 mL	1 mL	296012	01/17/23 08:00	OAJ3	EET CAL 4
Total/NA	Analysis	608.3		1	1 mL	1 mL	297704	01/23/23 15:41	UJ3K	EET CAL 4
	Instrument ID: GC66									
Total/NA	Analysis	218.6		1	4 mL	4 mL	294983	01/11/23 06:09	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	300.0		1	4 mL	4 mL	294998	01/11/23 08:50	PS	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	300.0		1	4 mL	4 mL	294999	01/11/23 08:50	PS	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	314.0		1	4 mL	4 mL	295096	01/11/23 15:49	PS	EET CAL 4
	Instrument ID: IC13									
Total/NA	Analysis	NO2NO3 Calc		1			295714	01/13/23 11:53	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total Recoverable	Prep	200.7			50 mL	50 mL	296315	01/17/23 06:17	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			296531	01/17/23 15:37	P1R	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.8			50 mL	50 mL	295623	01/13/23 08:13	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			295781	01/13/23 14:54	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Client Sample ID: Outfall011_20230110_Comp
Date Collected: 01/10/23 11:05
Date Received: 01/10/23 17:58

Lab Sample ID: 570-123391-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	245.1			25 mL	50 mL	295795	01/13/23 16:10	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			296261	01/16/23 19:27	C0YH	EET CAL 4
	Instrument ID: HG8									
Total Recoverable	Analysis	SM 2340B		1			294588	01/18/23 16:34	P1R	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	218.6 CR3		1			296555	01/17/23 17:49	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	297466	01/20/23 12:20	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	297482	01/20/23 14:21	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	295446	01/11/23 14:55	GG0B	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2130B		1			295186	01/11/23 16:12	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	295157	01/11/23 14:00	ZL7L	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	950 mL	1000 mL	296165	01/16/23 13:12	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 5310D		4	40 mL	40 mL	296081	01/13/23 22:24	UAPD	EET CAL 4
	Instrument ID: TOC8									
Total/NA	Prep	SM 5540C			100 mL	100 mL	295142	01/10/23 21:00	ZVB7	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	294924	01/10/23 22:10	ZVB7	EET CAL 4
	Instrument ID: UV9									
Total/NA	Analysis	SM5210B		1			296379	01/11/23 16:00	W0EF	EET CAL 4
	Instrument ID: BOD3									

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method	Method Description	Protocol	Laboratory
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	EET CAL 4
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
608.3	Organochlorine Pesticides in Water	40CFR136A	EET CAL 4
608.3	Polychlorinated Biphenyls (PCBs) (GC)	40CFR136A	EET CAL 4
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CAL 4
218.6 CR3	Chromium, Trivalent (Calculation)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 5310D	Organic Carbon, Total (TOC)	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
SM5210B	BOD, 5 Day	SM	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
5030C	Purge and Trap	SW846	EET CAL 4
608	Liquid-Liquid Extraction (Separatory Funnel)	40CFR136A	EET CAL 4
625	Liquid-Liquid Extraction	40CFR136A	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Job ID: 570-123391-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123391-1	Outfall011_20230110_Comp_F	Water	01/10/23 11:05	01/10/23 17:58
570-123391-2	Outfall011_20230110_Comp	Water	01/10/23 11:05	01/10/23 17:58

123391

Eurofins Calscience Irvine

570-123391 Chain of Custody

CHAIN OF CUSTODY FORM

1/2

Client Name/Address.	Project:	R/A	R	R	R	A	A	A	A	R	QRSW	
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 011 Comp	ANALYSIS REQUIRED										
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel. 949-260-3218		Total Dissolved Metals: (E200.7) As, Ba, B, Be, Co, Cr Fe, Mn, Ni, V Zn, Hardness as CaCO3 (E200.8) Ag, Cd, Cu, Pb, Sb, Se, Tl	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077)	Cr (VI), Total (E218.6)	Total Dissolved Metals: Mercury (E245.1)	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Comments
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)											
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)											

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD												
Outfall 011	Outfall011_20230110_Comp_F	1/10/2023 1105	WM	1 L Poly	1	None	190	No	X											Filter and preserve w/in 24hrs of receipt at lab.
			WM	borosilicate vials	1	None	320	No										X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall011_20230110_Comp	1/10/2023 1105	WM	500 mL Poly	1	NaOH	220	No		X										
			WM	2.5 Gal Cube	1	None	225	No		\	X									Unfiltered and unpreserved analysis, Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
			WM	1 L Glass Amber	1	None	230	No												
			*WM	1 Gal Cube	6	None	235	No				X								Only test if first or second rain events of the year. Deliver to ABC Labs in Ventura, CA *
			WM	40 mL VOA	3	HCl	240	No					X							
			WM	1 L Glass Amber	1	HCl	245	No						X						
			WM	1 L Glass Amber	1	None	255	No							X					
			WM	500 mL Poly	1	None	260	No								X				
			WM	1L Glass Amber	2	None	275	No										X		Extract within 24-Hours of sampling at Weck Labs at OF001,002,011, or 018.
	Outfall011_20230110_Comp_Extra	1/10/2023 1105	WM	40 mL VOA	3	HCl	240	No					H							Hold
			WM	1 L Glass Amber	1	None	255	No							H					Hold

Legend: A=Annual, R=Routine, QRSW=Quarterly Receiving Water

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-10 2023 1235	H.1	[signature]	1/10/23 1235 EC
[signature]	1/10/23 1755	EC	[signature]	1/10/23 1755
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour _____ 72 Hour _____ 10 Day ___X___
48 Hour _____ 5 Day _____ Normal _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: ___X___

* Hand-delivered to ABC Labs with Copy of COC

2/7/2023

2019-2020 Rainy Season
Version 5

123391

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

2/2

Client Name/Address:
Haley & Aldrich
5333 Mission Center Rd Suite 300
San Diego, CA 92108

Eurofins Calscience Irvine Contact: Christian Bondoc
17461 Derian Ave Suite #100
Irvine CA 92614
Tel: 949-260-3218

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Sampler: Adrian Mobeka

Project:
Boeing-SSFL NPDES
Permit 2023
Annual Outfall [001, 002, 011, 018]
Outfall 011
Comp

Project Manager: Katherine Miller
520.289.8606, 520.904.6944 (cell)

Field Manager: Mark Dominick
978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED																
									R/A	R	R	R	R/A	R	R	R	A	A	R					
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals (E200.7): As, Ba, B, Be, Co, Cr, Fe, Mn, Ni, V, Zn; Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	Turbidity, TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608)	Priority Pollutants-SVOCs (E625)	Total Recoverable Metals: Mercury (E245.1)				Comments
Outfall 011	Outfall011_20230110_Comp	1/10/2023 1105	WM	500 mL Poly	1	HNO_3	80	No	X										X					
			WM	1 L Glass Amber	2	None	110	No		X														
			WM	1 L Poly	1	None	115	No			X													
			WM	500 mL Poly	2	None	120	No				X												
			WM	500 mL Poly	2	None	125	No					X											48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X										48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X								
			WM	1 L Glass Amber	2	None	250	No									X							
			WM	1 L Glass Amber	2	None	175	No										X						
			WM	1 L Poly	1	None	185	No							X									
	Outfall011_20230110_Comp_Extra	1/10/2023 1105	WM	1 L Glass Amber	2	None	110	No		H														Hold
			WM	500 mL Poly	2	None	120	No				H												Hold
			WM	500 mL Poly	2	None	125	No					H											Hold
			WM	1 L Glass Amber	2	None	250	No									H							Hold
			WM	1 L Glass Amber	2	None	175	No										H						Hold

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Legend A=Annual, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:	Company:
[signature]	1.10.2023 1235		[signature]	1/10/23 1235	EC
[signature]	1/10/23 1755	EC	[signature]	1/10/23 1755	

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

1-7/1-7 2.3/2.3 SCH

2/7/2023

2019-2020 Rainy Season
Version 5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-203785.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-123391-5
Address: 13715 Rider Trail North,	Due Date Requested: 2/10/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES Outfall 002 COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	905.0/LSC_Dist_Susp Trilium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall011_20230110_Comp (570-123391-2)	1/10/23	17:55 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I II, III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	01/11/23 12:38	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No
570-203785

Containers

Count	Container Type	Preservative

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123391-1

Login Number: 123391
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 011 - COMP

JOB NUMBER

570-123391-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

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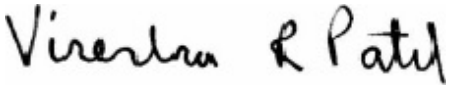
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123391-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123391-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123391-2

Comments
No additional comments.

Receipt
The samples were received on 1/10/2023 5:58 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.3º C.

Dioxin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Client Sample ID: Outfall011_20230110_Comp
Lab Sample ID: 570-123391-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.00000024	J,DX q	0.000047	0.000000064	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000017	J,DX MB q	0.000047	0.000000075	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.00000055	J,DX MB q	0.000047	0.000000091	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000012	J,DX MB	0.000047	0.000000075	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.00000089	J,DX MB	0.000047	0.000000091	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000053	J,DX MB q	0.000047	0.000000094	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.00000039	J,DX MB q	0.000047	0.000000092	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000053	J,DX MB q	0.000047	0.000000088	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000021	J,DX MB	0.000047	0.0000023	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000016	J,DX MB	0.000047	0.0000019	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.00000084	J,DX MB	0.000047	0.0000016	ug/L	1		1613B	Total/NA
OCDD	0.00021	MB	0.000095	0.0000039	ug/L	1		1613B	Total/NA
OCDF	0.000020	J,DX MB	0.000095	0.0000022	ug/L	1		1613B	Total/NA
Total PeCDF	0.00000085	J,DX q	0.000047	0.000000064	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000077	J,DX MB q	0.000047	0.000000075	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000095	J,DX MB q	0.000047	0.000000088	ug/L	1		1613B	Total/NA
Total HpCDD	0.000045	J,DX MB	0.000047	0.0000023	ug/L	1		1613B	Total/NA
Total HpCDF	0.000027	J,DX MB q	0.000047	0.0000016	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: Outfall011_20230110_Comp
Lab Sample ID: 570-123391-2
Date Collected: 01/10/23 11:05
Matrix: Water
Date Received: 01/10/23 17:58

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000095	0.00000055	ug/L		01/19/23 11:44	01/31/23 18:05	1
2,3,7,8-TCDF	ND		0.0000095	0.00000093	ug/L		01/19/23 11:44	01/31/23 18:05	1
1,2,3,7,8-PeCDD	ND		0.000047	0.00000030	ug/L		01/19/23 11:44	01/31/23 18:05	1
1,2,3,7,8-PeCDF	**0.00000024**	**J,DX q**	0.000047	0.00000064	ug/L		01/19/23 11:44	01/31/23 18:05	1
2,3,4,7,8-PeCDF	ND		0.000047	0.00000071	ug/L		01/19/23 11:44	01/31/23 18:05	1
1,2,3,4,7,8-HxCDD	**0.0000017**	**J,DX MB q**	0.000047	0.00000075	ug/L		01/19/23 11:44	01/31/23 18:05	1
1,2,3,6,7,8-HxCDD	**0.00000055**	**J,DX MB q**	0.000047	0.00000091	ug/L		01/19/23 11:44	01/31/23 18:05	1
1,2,3,7,8,9-HxCDD	**0.0000012**	**J,DX MB**	0.000047	0.00000075	ug/L		01/19/23 11:44	01/31/23 18:05	1
1,2,3,4,7,8-HxCDF	**0.00000089**	**J,DX MB**	0.000047	0.00000091	ug/L		01/19/23 11:44	01/31/23 18:05	1
1,2,3,6,7,8-HxCDF	**0.00000053**	**J,DX MB q**	0.000047	0.00000094	ug/L		01/19/23 11:44	01/31/23 18:05	1
1,2,3,7,8,9-HxCDF	**0.00000039**	**J,DX MB q**	0.000047	0.00000092	ug/L		01/19/23 11:44	01/31/23 18:05	1
2,3,4,6,7,8-HxCDF	**0.00000053**	**J,DX MB q**	0.000047	0.00000088	ug/L		01/19/23 11:44	01/31/23 18:05	1
1,2,3,4,6,7,8-HpCDD	**0.000021**	**J,DX MB**	0.000047	0.00000023	ug/L		01/19/23 11:44	01/31/23 18:05	1
1,2,3,4,6,7,8-HpCDF	**0.000016**	**J,DX MB**	0.000047	0.00000019	ug/L		01/19/23 11:44	01/31/23 18:05	1
1,2,3,4,7,8,9-HpCDF	**0.00000084**	**J,DX MB**	0.000047	0.00000016	ug/L		01/19/23 11:44	01/31/23 18:05	1
OCDD	**0.00021**	**MB**	0.000095	0.00000039	ug/L		01/19/23 11:44	01/31/23 18:05	1
OCDF	**0.000020**	**J,DX MB**	0.000095	0.00000022	ug/L		01/19/23 11:44	01/31/23 18:05	1
Total TCDD	ND		0.0000095	0.00000055	ug/L		01/19/23 11:44	01/31/23 18:05	1
Total TCDF	ND		0.0000095	0.00000093	ug/L		01/19/23 11:44	01/31/23 18:05	1
Total PeCDD	ND		0.000047	0.00000030	ug/L		01/19/23 11:44	01/31/23 18:05	1
Total PeCDF	**0.00000085**	**J,DX q**	0.000047	0.00000064	ug/L		01/19/23 11:44	01/31/23 18:05	1
Total HxCDD	**0.0000077**	**J,DX MB q**	0.000047	0.00000075	ug/L		01/19/23 11:44	01/31/23 18:05	1
Total HxCDF	**0.0000095**	**J,DX MB q**	0.000047	0.00000088	ug/L		01/19/23 11:44	01/31/23 18:05	1
Total HpCDD	**0.000045**	**J,DX MB**	0.000047	0.00000023	ug/L		01/19/23 11:44	01/31/23 18:05	1
Total HpCDF	**0.000027**	**J,DX MB q**	0.000047	0.00000016	ug/L		01/19/23 11:44	01/31/23 18:05	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*75*		*25 - 164*	*01/19/23 11:44*	*01/31/23 18:05*	*1*
13C-2,3,7,8-TCDF	*70*		*24 - 169*	*01/19/23 11:44*	*01/31/23 18:05*	*1*
13C-1,2,3,7,8-PeCDD	*88*		*25 - 181*	*01/19/23 11:44*	*01/31/23 18:05*	*1*
13C-1,2,3,7,8-PeCDF	*89*		*24 - 185*	*01/19/23 11:44*	*01/31/23 18:05*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: Outfall011_20230110_Comp **Lab Sample ID: 570-123391-2**
Date Collected: 01/10/23 11:05 **Matrix: Water**
Date Received: 01/10/23 17:58

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	89		21 - 178	01/19/23 11:44	01/31/23 18:05	1
13C-1,2,3,4,7,8-HxCDD	100		32 - 141	01/19/23 11:44	01/31/23 18:05	1
13C-1,2,3,6,7,8-HxCDD	78		28 - 130	01/19/23 11:44	01/31/23 18:05	1
13C-1,2,3,4,7,8-HxCDF	103		26 - 152	01/19/23 11:44	01/31/23 18:05	1
13C-1,2,3,6,7,8-HxCDF	98		26 - 123	01/19/23 11:44	01/31/23 18:05	1
13C-1,2,3,7,8,9-HxCDF	103		29 - 147	01/19/23 11:44	01/31/23 18:05	1
13C-2,3,4,6,7,8-HxCDF	105		28 - 136	01/19/23 11:44	01/31/23 18:05	1
13C-1,2,3,4,6,7,8-HpCDD	112		23 - 140	01/19/23 11:44	01/31/23 18:05	1
13C-1,2,3,4,6,7,8-HpCDF	96		28 - 143	01/19/23 11:44	01/31/23 18:05	1
13C-1,2,3,4,7,8,9-HpCDF	122		26 - 138	01/19/23 11:44	01/31/23 18:05	1
13C-OCDD	105		17 - 157	01/19/23 11:44	01/31/23 18:05	1
13C-OCDF	131		17 - 157	01/19/23 11:44	01/31/23 18:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	94		35 - 197	01/19/23 11:44	01/31/23 18:05	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (35-197)								
570-123391-2	Outfall011_20230110_Comp	94								
MB 320-648057/1-A	Method Blank	85								

Surrogate Legend
37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (31-191)								
LCS 320-648057/2-A	Lab Control Sample	86								
LCSD 320-648057/3-A	Lab Control Sample Dup	89								

Surrogate Legend
37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Job ID: 570-123391-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-123391-2	Outfall011_20230110_Comp	75	70	88	89	89	100	78	103
MB 320-648057/1-A	Method Blank	63	60	77	72	76	90	76	97

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-123391-2	Outfall011_20230110_Comp	98	103	105	112	96	122	105	131
MB 320-648057/1-A	Method Blank	97	85	98	89	83	90	71	87

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-648057/2-A	Lab Control Sample	61	56	74	74	72	88	73	93
LCSD 320-648057/3-A	Lab Control Sample Dup	67	64	75	75	78	97	77	101

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-648057/2-A	Lab Control Sample	90	87	95	92	83	97	79	98
LCSD 320-648057/3-A	Lab Control Sample Dup	100	91	104	93	88	93	77	92

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-648057/1-A
Matrix: Water
Analysis Batch: 650623

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 648057

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000069	ug/L		01/19/23 11:44	01/31/23 12:28	1
2,3,7,8-TCDF	ND		0.000010	0.00000012	ug/L		01/19/23 11:44	01/31/23 12:28	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000029	ug/L		01/19/23 11:44	01/31/23 12:28	1
1,2,3,7,8-PeCDF	ND		0.000050	0.00000012	ug/L		01/19/23 11:44	01/31/23 12:28	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000013	ug/L		01/19/23 11:44	01/31/23 12:28	1
1,2,3,4,7,8-HxCDD	0.00000374	J,DX q	0.000050	0.00000019	ug/L		01/19/23 11:44	01/31/23 12:28	1
1,2,3,6,7,8-HxCDD	0.00000237	J,DX q	0.000050	0.00000023	ug/L		01/19/23 11:44	01/31/23 12:28	1
1,2,3,7,8,9-HxCDD	0.00000379	J,DX	0.000050	0.00000019	ug/L		01/19/23 11:44	01/31/23 12:28	1
1,2,3,4,7,8-HxCDF	0.00000153	J,DX q	0.000050	0.00000018	ug/L		01/19/23 11:44	01/31/23 12:28	1
1,2,3,6,7,8-HxCDF	0.00000246	J,DX	0.000050	0.00000018	ug/L		01/19/23 11:44	01/31/23 12:28	1
1,2,3,7,8,9-HxCDF	0.00000228	J,DX q	0.000050	0.00000020	ug/L		01/19/23 11:44	01/31/23 12:28	1
2,3,4,6,7,8-HxCDF	0.00000181	J,DX q	0.000050	0.00000017	ug/L		01/19/23 11:44	01/31/23 12:28	1
1,2,3,4,6,7,8-HpCDD	0.00000536	J,DX	0.000050	0.00000011	ug/L		01/19/23 11:44	01/31/23 12:28	1
1,2,3,4,6,7,8-HpCDF	0.00000371	J,DX q	0.000050	0.00000014	ug/L		01/19/23 11:44	01/31/23 12:28	1
1,2,3,4,7,8,9-HpCDF	0.00000407	J,DX	0.000050	0.00000015	ug/L		01/19/23 11:44	01/31/23 12:28	1
OCDD	0.0000548	J,DX	0.00010	0.00000031	ug/L		01/19/23 11:44	01/31/23 12:28	1
OCDF	0.0000116	J,DX	0.00010	0.00000028	ug/L		01/19/23 11:44	01/31/23 12:28	1
Total TCDD	ND		0.000010	0.00000069	ug/L		01/19/23 11:44	01/31/23 12:28	1
Total TCDF	ND		0.000010	0.00000012	ug/L		01/19/23 11:44	01/31/23 12:28	1
Total PeCDD	ND		0.000050	0.00000029	ug/L		01/19/23 11:44	01/31/23 12:28	1
Total PeCDF	ND		0.000050	0.00000012	ug/L		01/19/23 11:44	01/31/23 12:28	1
Total HxCDD	0.00000991	J,DX q	0.000050	0.00000019	ug/L		01/19/23 11:44	01/31/23 12:28	1
Total HxCDF	0.00000809	J,DX q	0.000050	0.00000017	ug/L		01/19/23 11:44	01/31/23 12:28	1
Total HpCDD	0.00000810	J,DX	0.000050	0.00000011	ug/L		01/19/23 11:44	01/31/23 12:28	1
Total HpCDF	0.00000825	J,DX q	0.000050	0.00000014	ug/L		01/19/23 11:44	01/31/23 12:28	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*63*		*25 - 164*	*01/19/23 11:44*	*01/31/23 12:28*	*1*
13C-2,3,7,8-TCDF	*60*		*24 - 169*	*01/19/23 11:44*	*01/31/23 12:28*	*1*
13C-1,2,3,7,8-PeCDD	*77*		*25 - 181*	*01/19/23 11:44*	*01/31/23 12:28*	*1*
13C-1,2,3,7,8-PeCDF	*72*		*24 - 185*	*01/19/23 11:44*	*01/31/23 12:28*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-648057/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 650623 **Prep Batch: 648057**

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	76		21 - 178	01/19/23 11:44	01/31/23 12:28	1
13C-1,2,3,4,7,8-HxCDD	90		32 - 141	01/19/23 11:44	01/31/23 12:28	1
13C-1,2,3,6,7,8-HxCDD	76		28 - 130	01/19/23 11:44	01/31/23 12:28	1
13C-1,2,3,4,7,8-HxCDF	97		26 - 152	01/19/23 11:44	01/31/23 12:28	1
13C-1,2,3,6,7,8-HxCDF	97		26 - 123	01/19/23 11:44	01/31/23 12:28	1
13C-1,2,3,7,8,9-HxCDF	85		29 - 147	01/19/23 11:44	01/31/23 12:28	1
13C-2,3,4,6,7,8-HxCDF	98		28 - 136	01/19/23 11:44	01/31/23 12:28	1
13C-1,2,3,4,6,7,8-HpCDD	89		23 - 140	01/19/23 11:44	01/31/23 12:28	1
13C-1,2,3,4,6,7,8-HpCDF	83		28 - 143	01/19/23 11:44	01/31/23 12:28	1
13C-1,2,3,4,7,8,9-HpCDF	90		26 - 138	01/19/23 11:44	01/31/23 12:28	1
13C-OCDD	71		17 - 157	01/19/23 11:44	01/31/23 12:28	1
13C-OCDF	87		17 - 157	01/19/23 11:44	01/31/23 12:28	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	85		35 - 197	01/19/23 11:44	01/31/23 12:28	1

Lab Sample ID: LCS 320-648057/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 650623 **Prep Batch: 648057**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000202		ug/L		101	67 - 158		
2,3,7,8-TCDF			0.000200	0.000235		ug/L		118	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.000845		ug/L		84	70 - 142		
1,2,3,7,8-PeCDF			0.00100	0.000833		ug/L		83	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.000854		ug/L		85	68 - 160		
1,2,3,4,7,8-HxCDD			0.00100	0.000830	MB	ug/L		83	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.00102	MB	ug/L		102	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.000878	MB	ug/L		88	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.000871	MB	ug/L		87	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.000890	MB	ug/L		89	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.000902	MB	ug/L		90	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.000895	MB	ug/L		89	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.000850	MB	ug/L		85	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.000988	MB	ug/L		99	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.000829	MB	ug/L		83	78 - 138		
OCDD			0.00200	0.00210	MB	ug/L		105	78 - 144		
OCDF			0.00200	0.00182	MB	ug/L		91	63 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	61		20 - 175
13C-2,3,7,8-TCDF	56		22 - 152
13C-1,2,3,7,8-PeCDD	74		21 - 227
13C-1,2,3,7,8-PeCDF	74		21 - 192
13C-2,3,4,7,8-PeCDF	72		13 - 328
13C-1,2,3,4,7,8-HxCDD	88		21 - 193
13C-1,2,3,6,7,8-HxCDD	73		25 - 163
13C-1,2,3,4,7,8-HxCDF	93		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-648057/2-A
Matrix: Water
Analysis Batch: 650623

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 648057

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	90		21 - 159
13C-1,2,3,7,8,9-HxCDF	87		17 - 205
13C-2,3,4,6,7,8-HxCDF	95		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	92		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	83		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	97		20 - 186
13C-OCDD	79		13 - 199
13C-OCDF	98		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	86		31 - 191

Lab Sample ID: LCSD 320-648057/3-A
Matrix: Water
Analysis Batch: 650623

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 648057

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000193		ug/L		97	67 - 158	4	50
2,3,7,8-TCDF			0.000200	0.000222		ug/L		111	75 - 158	6	50
1,2,3,7,8-PeCDD			0.00100	0.000901		ug/L		90	70 - 142	6	50
1,2,3,7,8-PeCDF			0.00100	0.000888		ug/L		89	80 - 134	6	50
2,3,4,7,8-PeCDF			0.00100	0.000825		ug/L		83	68 - 160	3	50
1,2,3,4,7,8-HxCDD			0.00100	0.000836	MB	ug/L		84	70 - 164	1	50
1,2,3,6,7,8-HxCDD			0.00100	0.00109	MB	ug/L		109	76 - 134	7	50
1,2,3,7,8,9-HxCDD			0.00100	0.000911	MB	ug/L		91	64 - 162	4	50
1,2,3,4,7,8-HxCDF			0.00100	0.000869	MB	ug/L		87	72 - 134	0	50
1,2,3,6,7,8-HxCDF			0.00100	0.000901	MB	ug/L		90	84 - 130	1	50
1,2,3,7,8,9-HxCDF			0.00100	0.000910	MB	ug/L		91	78 - 130	1	50
2,3,4,6,7,8-HxCDF			0.00100	0.000905	MB	ug/L		91	70 - 156	1	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000885	MB	ug/L		89	70 - 140	4	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00102	MB	ug/L		102	82 - 122	4	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000870	MB	ug/L		87	78 - 138	5	50
OCDD			0.00200	0.00211	MB	ug/L		105	78 - 144	0	50
OCDF			0.00200	0.00190	MB	ug/L		95	63 - 170	5	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	67		20 - 175
13C-2,3,7,8-TCDF	64		22 - 152
13C-1,2,3,7,8-PeCDD	75		21 - 227
13C-1,2,3,7,8-PeCDF	75		21 - 192
13C-2,3,4,7,8-PeCDF	78		13 - 328
13C-1,2,3,4,7,8-HxCDD	97		21 - 193
13C-1,2,3,6,7,8-HxCDD	77		25 - 163
13C-1,2,3,4,7,8-HxCDF	101		19 - 202
13C-1,2,3,6,7,8-HxCDF	100		21 - 159
13C-1,2,3,7,8,9-HxCDF	91		17 - 205
13C-2,3,4,6,7,8-HxCDF	104		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	93		26 - 166

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-648057/3-A
Matrix: Water
Analysis Batch: 650623

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 648057

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDF	88		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	93		20 - 186
13C-OCDD	77		13 - 199
13C-OCDF	92		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	89		31 - 191

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Specialty Organics

Prep Batch: 648057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	1613B	
MB 320-648057/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-648057/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-648057/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 650623

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	1613B	648057
MB 320-648057/1-A	Method Blank	Total/NA	Water	1613B	648057
LCS 320-648057/2-A	Lab Control Sample	Total/NA	Water	1613B	648057
LCSD 320-648057/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	648057

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Client Sample ID: Outfall011_20230110_Comp
Lab Sample ID: 570-123391-2

Date Collected: 01/10/23 11:05
Matrix: Water
Date Received: 01/10/23 17:58

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			1053.5 mL	20.0 uL	648057	01/19/23 11:44	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	650623	01/31/23 18:05	KSS	EET SAC
	Instrument ID: DFS 1									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 570-123391-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23 *
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Job ID: 570-123391-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123391-2	Outfall011_20230110_Comp	Water	01/10/23 11:05	01/10/23 17:58

Eurofins Calscience Irvine

570-123391 Chain of Custody

CHAIN OF CUSTODY FORM

123391

1/2

Client Name/Address.	Project:
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 011 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel. 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED											
									R/A	R	R	R	A	A	A	A	R	QRSW		
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals: (E200.7) As, Ba, B, Be, Co, Cr Fe, Mn, Ni, V Zn, Hardness as CaCO3 (E200.8) Ag, Cd, Cu, Pb, Sb, Se, Tl	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Trifium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077)	Cr (VI), Total (E218.6)	Total Dissolved Metals: Mercury (E245.1)	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Comments
Outfall 011	Outfall011_20230110_Comp_F	1/10/2023 1105	WM	1 L Poly	1	None	190	No	X											Filter and preserve w/in 24hrs of receipt at lab.
			WM	borosilicate vials	1	None	320	No									X			Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall011_20230110_Comp	1/10/2023 1105	WM	500 mL Poly	1	NaOH	220	No		X										
			WM	2.5 Gal Cube	1	None	225	No		\	X									Unfiltered and unpreserved analysis, Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
			WM	1 L Glass Amber	1	None	230	No												
			WM	1 Gal Cube	6	None	235	No				X								Only test if first or second rain events of the year. Deliver to ABC Labs in Ventura, CA
			WM	40 mL VOA	3	HCl	240	No					X							
			WM	1 L Glass Amber	1	HCl	245	No						X						
			WM	1 L Glass Amber	1	None	255	No							X					
			WM	500 mL Poly	1	None	260	No								X				
			WM	1L Glass Amber	2	None	275	No										X		Extract within 24-Hours of sampling at Weck Labs at OF001,002,011, or 018.
	Outfall011_20230110_Comp_Extra	1/10/2023 1105	WM	40 mL VOA	3	HCl	240	No					H							Hold
			WM	1 L Glass Amber	1	None	255	No							H					Hold

Legend: A=Annual, R=Routine, QRSW=Quarterly Receiving Water

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-10 2023 1235	H.A	[signature]	1/10/23 1235 EC
[signature]	1/10/23 1755	EC	[signature]	1/10/23 1755
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour _____ 72 Hour _____ 10 Day ___X___
48 Hour _____ 5 Day _____ Normal _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: ___X___

* Hand-delivered to ABC Labs with Copy of COC

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2/6/2023

2019-2020 Rainy Season
Version 5

123391

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CHAIN OF CUSTODY FORM

2/2

Client Name/Address:
Haley & Aldrich
5333 Mission Center Rd Suite 300
San Diego, CA 92108

Eurofins Calscience Irvine Contact: Christian Bondoc
17461 Derian Ave Suite #100
Irvine CA 92614
Tel: 949-260-3218

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Sampler: Adrian Mobeka

Project:
Boeing-SSFL NPDES
Permit 2023
Annual Outfall [001, 002, 011, 018]
Outfall 011
Comp

Project Manager: Katherine Miller
520.289.8606, 520.904.6944 (cell)

Field Manager: Mark Dominick
978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED																
									R/A	R	R	R	R/A	R	R	R	A	A	R					
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals (E200.7): As, Ba, B, Be, Co, Cr, Fe, Mn, Ni, V, Zn; Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	Turbidity, TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608)	Priority Pollutants-SVOCs (E625)	Total Recoverable Metals: Mercury (E245.1)				Comments
Outfall 011	Outfall011_20230110_Comp	1/10/2023 1105	WM	500 mL Poly	1	HNO_3	80	No	X										X					
			WM	1 L Glass Amber	2	None	110	No		X														
			WM	1 L Poly	1	None	115	No			X													
			WM	500 mL Poly	2	None	120	No				X												
			WM	500 mL Poly	2	None	125	No					X											48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X										48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X								
			WM	1 L Glass Amber	2	None	250	No									X							
			WM	1 L Glass Amber	2	None	175	No										X						
			WM	1 L Poly	1	None	185	No							X									
	Outfall011_20230110_Comp_Extra	1/10/2023 1105	WM	1 L Glass Amber	2	None	110	No		H														Hold
			WM	500 mL Poly	2	None	120	No				H												Hold
			WM	500 mL Poly	2	None	125	No					H											Hold
			WM	1 L Glass Amber	2	None	250	No									H							Hold
			WM	1 L Glass Amber	2	None	175	No										H						Hold

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3

Legend A=Annual, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:	Company:
[signature]	1.10.2023 1235	EC	[signature]	1/10/23 1235	EC
[signature]	1/10/23	1755 EC	[signature]	1/10/23	1755

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

1-7/1-7 2.3/2.3 SCH

2/6/2023

2019-2020 Rainy Season
Version 5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-203785.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-123391-5
Address: 13715 Rider Trail North,	Due Date Requested: 2/10/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES Outfall 002 COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	905.0/LSC_Dist_Susp Trilium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall011_20230110_Comp (570-123391-2)	1/10/23	17:55 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I II, III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 01/11/23 12:38	Company EC	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No
570-203785

Containers

Count	Container Type	Preservative

2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203835.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123391-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/26/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 002 - COMP	Project #: 44024446			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall011_20230110_Comp (570-123391-2)	1/10/23	11:05 Pacific		Water			X	2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Relinquished by:	01/11/23 15:03	EC		1/12/23 920	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.3c

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123391-2

Login Number: 123391
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123391-2

Login Number: 123391
List Number: 2
Creator: Fisher, Jamyiah L

List Source: Eurofins Sacramento
List Creation: 01/12/23 01:30 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/11/2023 12:23:59 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 011 - COMP

JOB NUMBER

570-123391-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization

Virendra R Patil

Generated
3/11/2023 12:23:59 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123391-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Job ID: 570-123391-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123391-3

Comments
No additional comments.

Receipt
The samples were received on 1/10/2023 5:58 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.3º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units): This method was subcontracted to Weck Laboratories, Inc.. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Weck-Hydrazine: This method was subcontracted to Weck Laboratories, Inc.. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method	Method Description	Protocol	Laboratory
Subcontract	Weck-Hydrazine	None	Weck Lab
Subcontract	Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units)	None	Weck Lab

Protocol References:

None = None

Laboratory References:

Weck Lab = Weck Laboratories, Inc., 14859 E. Clark Avenue, City of Industry, CA 91745

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Job ID: 570-123391-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123391-2	Outfall011_20230110_Comp	Water	01/10/23 11:05	01/10/23 17:58

Work Orders:	3A10168	**Report Date:**	3/08/2023
		Received Date:	1/10/2023
Project:	570-123391-4	**Turnaround Time:**	Normal
		Phones:	(949) 261-1022
		Fax:	(949) 260-3297
Attn:	Virendra Patel	**P.O. #:**	570-123391-4
Client:	Eurofins Calscience - Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780	**Billing Code:**	

Dear Virendra Patel,

Enclosed are the results of analyses for samples received 1/10/23 with the Chain-of-Custody document. The samples were received in good condition, at 4.6 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: Outfall011_20230110_Comp (570-123391-2) — Sampled: 01/10/23 11:05 by Client

3A10168-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 525.2M			**Instr:** GCMS13				
Batch ID: W3B2337 **Preparation:** EPA 525.2/SPE			**Prepared:** 03/01/23 07:24				**Analyst:** EFC
Chlorpyrifos	ND	4.0	10	ng/l	1	03/03/23	O-14
Diazinon	ND	3.4	10	ng/l	1	03/03/23	O-14
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*87%*		*50-141*	*Conc: 435*		*03/03/23*	
Triphenyl phosphate	*105%*		*63-200*	*Conc: 523*		*03/03/23*	
Method: EPA 8315M			**Instr:** LCMS03				
Batch ID: W3A1773 **Preparation:** Microextraction			**Prepared:** 01/20/23 16:29				**Analyst:** pjs
Monomethylhydrazine (MMH)	ND	0.31	2.0	ug/l	1	01/20/23	

Quality Control Results

Hydrazine by LCMS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3A1773-BLK1)					**Prepared & Analyzed: 01/20/23**						
Monomethylhydrazine (MMH)	ND	0.31	2.0	ug/l							
Blank (W3A1773-BLK2)					**Prepared: 01/20/23 Analyzed: 01/23/23**						
Monomethylhydrazine (MMH)	ND	0.31	2.0	ug/l							QC-2
LCS (W3A1773-BS1)					**Prepared & Analyzed: 01/20/23**						
Monomethylhydrazine (MMH)	20.7	0.31	2.0	ug/l	20.0		103	50-150			
LCS (W3A1773-BS2)					**Prepared: 01/20/23 Analyzed: 01/23/23**						
Monomethylhydrazine (MMH)	27.6	0.31	2.0	ug/l	20.0		138	50-150			QC-2
Matrix Spike (W3A1773-MS1)	**Source: 3A06106-03**				**Prepared & Analyzed: 01/20/23**						
Monomethylhydrazine (MMH)	15.5	0.31	2.0	ug/l	20.0	*ND*	77	50-150			
Matrix Spike Dup (W3A1773-MSD1)	**Source: 3A06106-03**				**Prepared & Analyzed: 01/20/23**						
Monomethylhydrazine (MMH)	14.2	0.31	2.0	ug/l	20.0	*ND*	71	50-150	9	30	

Semivolatile Organics - Low Level by Tandem GC/MS/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3B2337-BLK1)					**Prepared: 03/01/23 Analyzed: 03/03/23**						
Chlorpyrifos	ND	4.0	10	ng/l							
Diazinon	ND	3.4	10	ng/l							
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*459*			*ng/l*	*500*		*92*	*50-141*			
Triphenyl phosphate	*493*			*ng/l*	*500*		*99*	*63-200*			
LCS (W3B2337-BS1)					**Prepared: 03/01/23 Analyzed: 03/03/23**						
Chlorpyrifos	56.2	4.0	10	ng/l	50.0		112	63-145			
Diazinon	50.0	3.4	10	ng/l	50.0		100	25-180			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*500*			*ng/l*	*500*		*100*	*50-141*			
Triphenyl phosphate	*520*			*ng/l*	*500*		*104*	*63-200*			
Matrix Spike (W3B2337-MS1)	**Source: 3B16020-01**				**Prepared: 03/01/23 Analyzed: 03/03/23**						
Chlorpyrifos	54.5	4.0	10	ng/l	50.0	*ND*	109	37-168			
Diazinon	51.7	3.4	10	ng/l	50.0	*ND*	103	36-153			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*422*			*ng/l*	*500*		*84*	*50-141*			
Triphenyl phosphate	*521*			*ng/l*	*500*		*104*	*63-200*			
Matrix Spike Dup (W3B2337-MSD1)	**Source: 3B16020-01**				**Prepared: 03/01/23 Analyzed: 03/03/23**						
Chlorpyrifos	52.6	4.0	10	ng/l	50.0	*ND*	105	37-168	4	30	
Diazinon	48.8	3.4	10	ng/l	50.0	*ND*	98	36-153	6	30	
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*447*			*ng/l*	*500*		*89*	*50-141*			
Triphenyl phosphate	*548*			*ng/l*	*500*		*110*	*63-200*			

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

Notes and Definitions

Item	Definition
J	Estimated conc. detected <MRL and >MDL.
O-14	This analysis was requested by the client after the holding time was exceeded.
QC-2	This QC sample was reanalyzed to complement samples that require re-analysis on different date. See analysis date.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Analyses Accreditation Summary

Analyte	CAS #	Not By NELAP	ANAB ISO 17025
EPA 8315M in Water			
Monomethylhydrazine (MMH)	60-34-4	✓	

Reviewed by:

Rahul R. Nair
Project Manager

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

284 i Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Laule W.

Chain of Custody Record

3

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California	
Address: 14859 E. Clark Avenue, ,	Due Date Requested: 1/31/2023		
City: City of Industry	TAT Requested (days):		
State, Zip: CA, 91745			
Phone:	PO #:		
Email:	WO #:		
Project Name: Boeing SSFL NPDES - Outfall 002 - COMP	Project #: 44024446		
Site:	SSOW#:		

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (Weck-Hydrazine)/ Weck-Hydrazine (Hold)	Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units)
			Preservation Code:						
Outfall011_20230110_Comp (570-123391-2)	1/10/23	11:05 Pacific		Water			X	X	
Outfall011_20230110_Comp_Extra (570-123391-3)	1/10/23	11:05 Pacific		Water				X	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under cl maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accr attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:
Empty Kit Relinquished by: Date:	Time: Method of Shipment:

ICOC No:
570-203682

Containers

Count	Container Type	Preservative
4	Amber Glass 1 liter - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
2	SUBCONTRACT	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Level IV needed
3	SUBCONTRACT	SUB (Weck-Hydrazine)/ Weck-Hydrazine (Hold)	Level IV needed

COC	COC matches sample labels?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Receipt Information	Sample Temperature	4.6°C			
	Samples received on ice?	☒	☐		
	Ice Type (Blue/Wet)	WET			
	All samples intact?	☒	☐		
	Samples in proper containers?	☒	☐		
	Sufficient sample volume?	☒	☐		
	Samples intact?	☒	☐		
	Received within holding time?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Sample Preservation Verification?	Sample labels checked for correct preservation?	☒	☐	☐	
	VOC Headspace: (No) none, If Yes (See comment) 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☐	☒	☐ <6m
	pH verified upon receipt? Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 525.2<2; 6710B<2; 608.3 5-9	☒	☐	☐	pH paper Lot#
	Free Chlorine Tested <0.1	☐	☐	☒	Cl Test Strip Lo
	O&G pH <2 verified?	☐	☐	☐	pH paper Lot#
	pH adjusted for O&G	☐	☐	☐	pH Reading: Acid Lot# Amt added:
	Project Manager notified?	☐	☐	☒	

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PM Comments

Sample Receipt Checklist Prepared by:

Signature: Jerico Bolotano Date: 01/10/22

Eurofins Calscience Irvine

570-123391 Chain of Custody

CHAIN OF CUSTODY FORM

123391

1/2

Client Name/Address.	Project:
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 011 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel. 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED											
									R/A	R	R	R	A	A	A	A	R	QRSW		
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals: (E200.7) As, Ba, B, Be, Co, Cr Fe, Mn, Ni, V Zn, Hardness as CaCO3 (E200.8) Ag, Cd, Cu, Pb, Sb, Se, Tl	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077)	Cr (VI), Total (E218.6)	Total Dissolved Metals: Mercury (E245.1)	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Comments
Outfall 011	Outfall011_20230110_Comp_F	1/10/2023 1105	WM	1 L Poly	1	None	190	No	X											Filter and preserve w/in 24hrs of receipt at lab.
			WM	borosilicate vials	1	None	320	No									X			Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall011_20230110_Comp	1/10/2023 1105	WM	500 mL Poly	1	NaOH	220	No		X										
			WM	2.5 Gal Cube	1	None	225	No		\	X									Unfiltered and unpreserved analysis, Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
			WM	1 L Glass Amber	1	None	230	No												
			*WM	1 Gal Cube	6	None	235	No				X								Only test if first or second rain events of the year. Deliver to ABC Labs in Ventura, CA *
			WM	40 mL VOA	3	HCl	240	No					X							
			WM	1 L Glass Amber	1	HCl	245	No						X						
			WM	1 L Glass Amber	1	None	255	No							X					
			WM	500 mL Poly	1	None	260	No								X				
			WM	1L Glass Amber	2	None	275	No										X		Extract within 24-Hours of sampling at Weck Labs at OF001,002,011, or 018.
	Outfall011_20230110_Comp_Extra	1/10/2023 1105	WM	40 mL VOA	3	HCl	240	No					H							Hold
			WM	1 L Glass Amber	1	None	255	No							H					Hold

Legend: A=Annual, R=Routine, QRSW=Quarterly Receiving Water

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-10 2023 1235	H.1	[signature]	1/10/23 1235 EC
[signature]	1/10/23 1755	EC	[signature]	1/10/23 1755
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour _____ 72 Hour _____ 10 Day ___X___
48 Hour _____ 5 Day _____ Normal _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: ___X___

* Hand-delivered to ABC Labs with Copy of COC

1
2
3

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3/11/2023

2019-2020 Rainy Season
Version 5

123391

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

2/2

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 011 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Project Manager:** Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	**Field Manager:** Mark Dominick 978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R/A Total Recoverable Metals (E200.7): As, Ba, B, Be, Co, Cr, Fe, Mn, Ni, V, Zn Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	R TCDD (and all congeners) (E1613B)	R BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	R Surfactants (MBAS) (SM5540C/E425.1)	R/A Cl- F- SO4 Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	R Turbidity TDS (SM2540C/E180.1)	R TSS (160.2 (SM2540D))	R Ammonia-N (E350.2)	A Priority Pollutants-Pesticides+PCBs (E608)	A Priority Pollutants-SVOCs (E625)	R Total Recoverable Metals: Mercury (E245.1)	Comments
Outfall 011	Outfall011_20230110_Comp	1/10/2023 1105	WM	500 mL Poly	1	HNO_3	80	No	X										X	
			WM	1 L Glass Amber	2	None	110	No		X										
			WM	1 L Poly	1	None	115	No			X									
			WM	500 mL Poly	2	None	120	No				X								
			WM	500 mL Poly	2	None	125	No					X							48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X						48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X				
			WM	1 L Glass Amber	2	None	250	No									X			
			WM	1 L Glass Amber	2	None	175	No										X		
			WM	1 L Poly	1	None	185	No							X					
	Outfall011_20230110_Comp_Extra	1/10/2023 1105	WM	1 L Glass Amber	2	None	110	No		H										Hold
			WM	500 mL Poly	2	None	120	No				H								Hold
			WM	500 mL Poly	2	None	125	No					H							Hold
			WM	1 L Glass Amber	2	None	250	No									H			Hold
			WM	1 L Glass Amber	2	None	175	No										H		Hold

Legend A=Annual, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:	Company:
[signature]	1.10.2023 1235		[signature]	1/10/23 1235	EC
[signature]	1/10/23	1755 EC	[signature]	1/10/23	1755

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

1-7/1-7 2.3/2.3 SCH

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3/11/2023

2019-2020 Rainy Season
Version 5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-203785.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-123391-5
Address: 13715 Rider Trail North,	Due Date Requested: 2/10/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES Outfall 002 COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	906.0/LSC_Dist_Susp Trilium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall011_20230110_Comp (570-123391-2)	1/10/23	17:55 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I II, III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	01/11/23 12:38	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No
570-203785

Containers

Count	Container Type	Preservative

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123391-3

Login Number: 123391
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/3/2023 10:38:51 AM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 011 - COMP

JOB NUMBER

570-123391-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization

Virendra R Patil

Generated
2/3/2023 10:38:51 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123391-4
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc. Job ID: 570-123391-4
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Job ID: 570-123391-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123391-4

Comments
No additional comments.

Receipt
The samples were received on 1/10/2023 5:58 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.3º C.

Receipt Exceptions

The reference method requires samples to be preserved to a pH of <2 SU. The following samples were received with insufficient preservation at a pH of >2 SU: Outfall011_20230110_Comp_F (570-123391-1), Outfall011_20230110_Comp (570-123391-2) and Outfall011_20230110_Comp_Extra (570-123391-3). 570-123391-Z-2. The sample was preserved to the appropriate pH in the laboratory.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Chronic-Selenestrum: This method was subcontracted to Aquatic Bioassay & Consulting. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-4
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method	Method Description	Protocol	Laboratory
EPA	Bioassay	EPA	Aquatic

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Aquatic = Aquatic Bioassay & Consulting, 29 North Olive Street, Ventura, CA 93001

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Job ID: 570-123391-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123391-2	Outfall011_20230110_Comp	Water	01/10/23 11:05	01/10/23 17:58

aquatic bioassay & consulting laboratories, inc

January 26, 2023

Mr. Virendra Patel
Eurofins Calscience
7440 Lincoln Way
Garden Grove, CA 92841-1432

Dear Mr. Patel:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA-821-R-02-013.* Results were as follows:

CLIENT:	Eurofins Calscience
SAMPLE I.D.:	Outfall011_20230110_Comp
DATE RECEIVED:	10 Jan - 2023
ABC LAB. NO.:	CSE0123.047

CHRONIC SELENASTRUM ALGAE GROWTH BIOASSAY

IWC = 100.00 %

TST RESULT

GROWTH = PASS % EFFECT = -13.06 %

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 20 Jan-23 15:54 (p 1 of 1)
Test Code/ID: CSE0123.047 / 19-4755-7753

Selenastrum Growth Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	19-5768-2320	Test Type:	Cell Growth	Analyst:	
Start Date:	10 Jan-23 15:52	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Jan-23 14:20	Species:	Selenastrum capricornutum	Brine:	Not Applicable
Test Length:	94h	Taxon:	Chlorophyta	Source:	Aquatic Biosystems, CO Age: 5d
Sample ID:	10-0189-3468	Code:	CSE0123.047	Project:	Boeing-SSFL NPDES
Sample Date:	10 Jan-23 11:05	Material:	Sample Water	Source:	Bioassay Report
Receipt Date:	10 Jan-23 14:35	CAS (PC):		Station:	Outfall011_20230110_Comp
Sample Age:	5h (5 °C)	Client:	Eurofins Calscience		

SIngle Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
05-4066-7001	Cell Density	TST-Welch's t Test	<1.0E-05	100% passed cell density	1

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
05-4066-7001	Cell Density	Control CV	0.06411	<<	0.2	Yes	Passes Criteria
05-4066-7001	Cell Density	Control Resp	1.25E+6	1.00E+6	<<	Yes	Passes Criteria

Cell Density Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	8	1.254E+6	1.187E+6	1.321E+6	1.122E+6	1.344E+6	2.843E+4	8.041E+4	6.41%	0.00%
100		8	1.418E+6	1.344E+6	1.492E+6	1.261E+6	1.544E+6	3.129E+4	8.851E+4	6.24%	-13.06%

Cell Density Detail — MD5: A25C01826A524B73608A716D18FC3741

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
0	N	1.210E+6	1.342E+6	1.344E+6	1.188E+6	1.223E+6	1.122E+6	1.294E+6	1.310E+6
100		1.403E+6	1.544E+6	1.491E+6	1.367E+6	1.408E+6	1.382E+6	1.261E+6	1.487E+6

CETIS Analytical Report

Report Date: 20 Jan-23 15:54 (p 1 of 2)
Test Code/ID: CSE0123.047 / 19-4755-7753

Selenastrum Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	05-4066-7001	Endpoint:	Cell Density	CETIS Version:	CETISv2.1.4
Analyzed:	20 Jan-23 15:54	Analysis:	Parametric Bioequivalence-Two Sample	Status Level:	1
Edit Date:	20 Jan-23 15:52	MD5 Hash:	A25C01826A524B73608A716D18FC3741	Editor ID:	009-702-627-3
Batch ID:	19-5768-2320	Test Type:	Cell Growth	Analyst:	
Start Date:	10 Jan-23 15:52	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Jan-23 14:20	Species:	Selenastrum capricornutum	Brine:	Not Applicable
Test Length:	94h	Taxon:	Chlorophyta	Source:	Aquatic Biosystems, CO Age: 5d
Sample ID:	10-0189-3468	Code:	CSE0123.047	Project:	Boeing-SSFL NPDES
Sample Date:	10 Jan-23 11:05	Material:	Sample Water	Source:	Bioassay Report
Receipt Date:	10 Jan-23 14:35	CAS (PC):		Station:	Outfall011_20230110_Comp
Sample Age:	5h (5 °C)	Client:	Eurofins Calscience		

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	100% passed cell density endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(α:25%)
Negative Control		100*	12	12.6	0.6955	CDF	<1.0E-05	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.06411	<<	0.2	Yes	Passes Criteria
Control Resp	1.25E+6	1.00E+6	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	1.073E+11	1.073E+11	1	15	0.0017	Significant Effect
Error	1.001E+11	7.15E+09	14			
Total	2.074E+11		15			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Levene Equality of Variance Test	0.003446	8.862	0.9540	Equal Variances
	Mod Levene Equality of Variance Test	0.02569	8.862	0.8750	Equal Variances
	Variance Ratio F Test	1.212	8.885	0.8065	Equal Variances
Distribution	Anderson-Darling A2 Test	0.3766	3.878	0.4154	Normal Distribution
	D'Agostino Skewness Test	0.6212	2.576	0.5344	Normal Distribution
	Kolmogorov-Smirnov D Test	0.128	0.2471	0.7636	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9535	0.8408	0.5479	Normal Distribution

Cell Density Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	8	1.254E+6	1.187E+6	1.321E+6	1.258E+6	1.122E+6	1.344E+6	2.843E+4	6.41%	0.00%
100		8	1.418E+6	1.344E+6	1.492E+6	1.406E+6	1.261E+6	1.544E+6	3.129E+4	6.24%	-13.06%

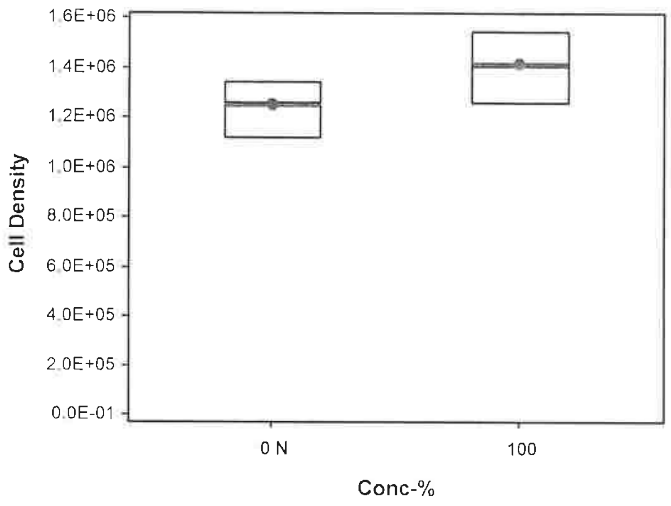
Cell Density Detail

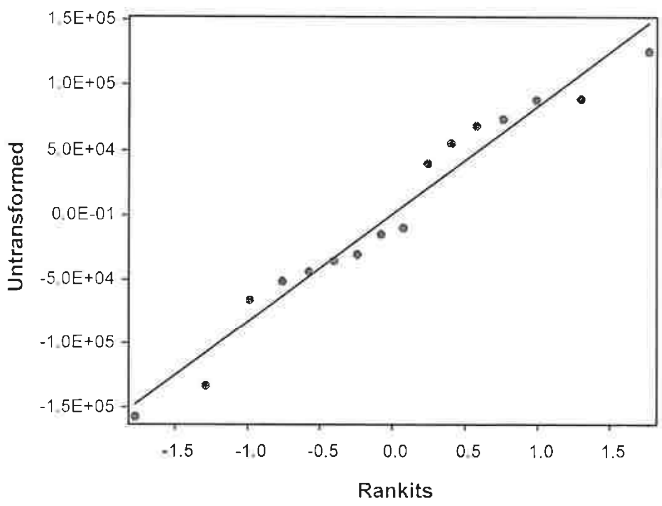
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
0	N	1.210E+6	1.342E+6	1.344E+6	1.188E+6	1.223E+6	1.122E+6	1.294E+6	1.310E+6
100		1.403E+6	1.544E+6	1.491E+6	1.367E+6	1.408E+6	1.382E+6	1.261E+6	1.487E+6

Selenastrum Growth Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	05-4066-7001	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	20 Jan-23 15:54	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	20 Jan-23 15:52	**MD5 Hash:**	A25C01826A524B73608A716D18FC3741	**Editor ID:**	009-702-627-3

Graphics





CETIS Measurement Report

Report Date: 20 Jan-23 15:54 (p 1 of 1)
Test Code/ID: CSE0123.047 / 19-4755-7753

Selenastrum Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	19-5768-2320	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	10 Jan-23 15:52	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	14 Jan-23 14:20	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Test Length:	94h	**Taxon:**	Chlorophyta	**Source:**	Aquatic Biosystems, CO **Age:** 5d
Sample ID:	10-0189-3468	**Code:**	CSE0123.047	**Project:**	Boeing-SSFL NPDES
Sample Date:	10 Jan-23 11:05	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	10 Jan-23 14:35	**CAS (PC):**		**Station:**	Outfall011_20230110_Comp
Sample Age:	5h (5 °C)	**Client:**	Eurofins Calscience		

Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	1	77	---	---	77	77	---	---	---	0
100		1	41	---	---	41	41	---	---	---	0
Overall		2	59	-169.7	287.7	41	77	18	25.46	43.15%	0 (0%)

Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	484.8	463.6	506	456	500	3.41	17.05	3.52%	0
100		5	327.8	323.2	332.4	324	333	0.7403	3.701	1.13%	0
Overall		10	406.3	346.5	466.1	324	500	26.42	83.56	20.57%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	1	118	---	---	118	118	---	---	---	0
100		1	48	---	---	48	48	---	---	---	0
Overall		2	83	-361.7	527.7	48	118	35	49.5	59.64%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	7.86	7.693	8.027	7.7	8	0.02683	0.1342	1.71%	0
100		5	8.06	7.918	8.202	7.9	8.2	0.0228	0.114	1.41%	0
Overall		10	7.96	7.847	8.073	7.7	8.2	0.04989	0.1578	1.98%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	25.56	25.39	25.73	25.5	25.8	0.02683	0.1342	0.52%	0
100		5	25.56	25.39	25.73	25.5	25.8	0.02683	0.1342	0.52%	0
Overall		10	25.56	25.47	25.65	25.5	25.8	0.04	0.1265	0.49%	0 (0%)

Temp. deg. C = 5.0 °C

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Chlorine (mg/L) = <0.1

NH3 (mg/L) = <0.1

Client Name/Address: Haley & Aldrich, 5333 Mission Center Rd Suite 300, San Diego, CA 92108	Project: Boeing-SSFL NPDES, Permit 2023, Annual Outfall [001, 002, 011, 018], Outfall 011, Comp
Eurofins Calscience Irvine Contact: Christian Bondoc, 17461 Derian Ave Suite #100, Irvine CA 92614, Tel: 949-260-3218	Project Manager: Katherine Miller, 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Field Manager: Mark Dominick, 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

ANALYSIS REQUIRED

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R/A: Total Dissolved Metals: (E200.7): As, Ba, B, Be, Co, Cr, Fe, Mn, Ni, V, Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	R: Cyanide (SM4500-CN-E / E335.2)	R: Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R: Chronic Toxicity - Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA	A: 1,4-Dioxane (E624 (SW8260M_SIM))	A: Total Organic Carbon (415.2 (SM 5310B))	A: Monomethyl hydrazine (SW8315M/DV-WC-0077)	A: Cr (VI), Total (E218.6)	R: Total Dissolved Metals: Mercury (E245.1)	QRSW: Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Comments 047
Outfall 011	Outfall011_20230110_Comp_F	1/10/2023 1105	WM	1 L Poly	1	None	190	No	X										Filter and preserve w/in 24hrs of receipt at lab.
			WM	borosilicate vials	1	None	320	No									X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall011_20230110_Comp	1/10/2023 1105	WM	600 mL Poly	1	NaOH	220	No		X									
			WM	2.5 Gal Cube	1	None	225	No											Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
			WM	1 L Glass Amber	1	None	230	No		\	X								
			WM	1 Gal Cube	6	None	235	No				X							Only test if first or second rain events of the year. Deliver to ABC Labs in Ventura, CA
			WM	40 mL VOA	3	HCl	240	No					X						
			WM	1 L Glass Amber	1	HCl	245	No						X					
			WM	1 L Glass Amber	1	None	255	No							X				
			WM	500 mL Poly	1	None	280	No								X			
			WM	1L Glass Amber	2	None	270	No										X	Extract within 24-Hours of sampling at Weck Labs at OF001,002,011, or 018
	Outfall011_20230110_Comp_Extra	1/10/2023 1105	WM	40 mL VOA	3	HCl	240	No					H						Hold
			WM	1 L Glass Amber	1	None	255	No							H				Hold

Legend: A=Annual, R=Routine, QRSW=Quarterly Receiving Water

Relinquished By	Date/Time:	Company:	Received By	Date/Time:	Turn-around time: (Check)
[signature]	1-10-2023	LBBS H:A	[signature]	1/10/23 1235 EC	24 Hour: ___ 72 Hour: ___ 10 Day: _X_ / 48 Hour: ___ 5 Day: ___ Normal: ___
Relinquished By: [signature]	Date/Time: 1-10-2023 / 1435	Company: H:A	Received By: Victor [signature]	Date/Time: 1/10/23 1435	Sample Integrity: (Check) Intact: ___ On Ice: ___
Relinquished By	Date/Time:	Company:	Received By	Date/Time:	Store samples for 6 months. Data Requirements: (Check) No Level IV: ___ All Level IV: _X_

Hand-delivered to ADC Labs with Copy of COC

2019-2020 Rainy Season
Version 5

2/3/2023

aquatic bioassay & consulting laboratories, inc

CHRONIC SELENASTRUM GROWTH BIOASSAY

DATE: 12 January - 2023

STANDARD TOXICANT: Cadmium Chloride

NOEC = 20.00 ug/l

IC25 = 53.36 ug/l
IC50 = 102.30 ug/l

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 20 Jan-23 16:52 (p 1 of 1)
Test Code/ID: SEL011223 / 04-7405-9726

Selenastrum Growth Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	19-4179-0418	Test Type:	Cell Growth	Analyst:	
Start Date:	12 Jan-23 13:24	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	16 Jan-23 13:10	Species:	Selenastrum capricornutum	Brine:	Not Applicable
Test Length:	96h	Taxon:	Chlorophyta	Source:	Aquatic Biosystems, CO Age: 7d
Sample ID:	01-0315-3386	Code:	SEL011223	Project:	REF TOX
Sample Date:	12 Jan-23 13:24	Material:	Cadmium chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	Internal Lab		

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	S
02-3719-8182	Cell Density	Dunnett Multiple Comparison Test		20	40	28.28	4.66%	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓	Level	µg/L	95% LCL	95% UCL	S
05-1997-3179	Cell Density	Linear Interpolation (ICPIN)		IC15	34.55	31.57	37.91	1
				IC20	39.4	35.65	48.58	
				IC25	53.36	40.71	62.3	
				IC40	88.59	84.67	92.36	
				IC50	102.3	99.22	105.6	

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
02-3719-8182	Cell Density	Control CV	0.03087	<<	0.2	Yes	Passes Criteria
05-1997-3179	Cell Density	Control CV	0.03087	<<	0.2	Yes	Passes Criteria
02-3719-8182	Cell Density	Control Resp	1.06E+6	1.00E+6	<<	Yes	Passes Criteria
05-1997-3179	Cell Density	Control Resp	1.06E+6	1.00E+6	<<	Yes	Passes Criteria

Cell Density Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	4	1.057E+6	1.005E+6	1.109E+6	1.033E+6	1.105E+6	1.631E+4	3.262E+4	3.09%	0.00%
20		4	1.091E+6	1.026E+6	1.156E+6	1.040E+6	1.131E+6	2.040E+4	4.080E+4	3.74%	-3.26%
40		4	8.525E+5	8.034E+5	9.016E+5	8.250E+5	8.890E+5	1.541E+4	3.083E+4	3.62%	19.33%
80		4	7.118E+5	6.788E+5	7.447E+5	6.940E+5	7.330E+5	1.035E+4	2.069E+4	2.91%	32.65%
140		4	2.412E+5	1.995E+5	2.830E+5	2.190E+5	2.790E+5	1.312E+4	2.623E+4	10.87%	77.17%
180		4	1.472E+5	1.228E+5	1.717E+5	1.320E+5	1.610E+5	7.696E+3	1.539E+4	10.45%	86.07%

Cell Density Detail

MD5: 8002C18F242E2CF77D044A91E3CE4461

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.045E+6	1.033E+6	1.044E+6	1.105E+6
20		1.131E+6	1.078E+6	1.116E+6	1.040E+6
40		8.670E+5	8.290E+5	8.250E+5	8.890E+5
80		6.940E+5	7.330E+5	6.940E+5	7.260E+5
140		2.190E+5	2.370E+5	2.300E+5	2.790E+5
180		1.360E+5	1.610E+5	1.600E+5	1.320E+5

Selenastrum Growth Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	02-3719-8182	Endpoint:	Cell Density	CETIS Version:	CETISv2.1.4
Analyzed:	20 Jan-23 16:51	Analysis:	Parametric-Control vs Treatments	Status Level:	1
Edit Date:	20 Jan-23 16:48	MD5 Hash:	8002C18F242E2CF77D044A91E3CE4461	Editor ID:	009-702-627-3
Batch ID:	19-4179-0418	Test Type:	Cell Growth	Analyst:	
Start Date:	12 Jan-23 13:24	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	16 Jan-23 13:10	Species:	Selenastrum capricornutum	Brine:	Not Applicable
Test Length:	96h	Taxon:	Chlorophyta	Source:	Aquatic Biosystems, CO Age: 7d
Sample ID:	01-0315-3386	Code:	SEL011223	Project:	REF TOX
Sample Date:	12 Jan-23 13:24	Material:	Cadmium chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	Internal Lab		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Untransformed	C > T	20	40	28.28	---	49300	4.66%

Dunnett Multiple Comparison Test

Control	vs	Conc-µg/L	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(α:5%)
Negative Control		20	6	-1.685	2.407	49300	CDF	0.9976	Non-Significant Effect
		40*	6	9.973	2.407	49300	CDF	2.7E-05	Significant Effect
		80*	6	16.85	2.407	49300	CDF	2.7E-05	Significant Effect
		140*	6	39.82	2.407	49300	CDF	2.7E-05	Significant Effect
		180*	6	44.41	2.407	49300	CDF	2.7E-05	Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.03087	<<	0.2	Yes	Passes Criteria
Control Resp	1.06E+6	1.00E+6	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	3.272E+12	6.545E+11	5	780.2	<1.0E-05	Significant Effect
Error	1.51E+10	838820000	18			
Total	3.287E+12		23			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	2.884	15.09	0.7178	Equal Variances
	Levene Equality of Variance Test	1.242	4.248	0.3306	Equal Variances
	Mod Levene Equality of Variance Test	0.6992	4.248	0.6311	Equal Variances
Distribution	Anderson-Darling A2 Test	0.7994	3.878	0.0381	Normal Distribution
	D'Agostino Kurtosis Test	0.7357	2.576	0.4619	Normal Distribution
	D'Agostino Skewness Test	0.6079	2.576	0.5433	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	0.9108	9.21	0.6342	Normal Distribution
	Kolmogorov-Smirnov D Test	0.2114	0.2056	0.0070	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.9401	0.884	0.1636	Normal Distribution

Cell Density Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	1.057E+6	1.005E+6	1.109E+6	1.044E+6	1.033E+6	1.105E+6	1.631E+4	3.09%	0.00%
20		4	1.091E+6	1.026E+6	1.156E+6	1.097E+6	1.040E+6	1.131E+6	2.040E+4	3.74%	-3.26%
40		4	8.525E+5	8.034E+5	9.016E+5	8.480E+5	8.250E+5	8.890E+5	1.541E+4	3.62%	19.33%
80		4	7.118E+5	6.788E+5	7.447E+5	7.047E+5	6.940E+5	7.330E+5	1.035E+4	2.91%	32.65%
140		4	2.412E+5	1.995E+5	2.830E+5	2.335E+5	2.190E+5	2.790E+5	1.312E+4	10.87%	77.17%
180		4	1.472E+5	1.228E+5	1.717E+5	1.480E+5	1.320E+5	1.610E+5	7.696E+3	10.45%	86.07%

Selenastrum Growth Test

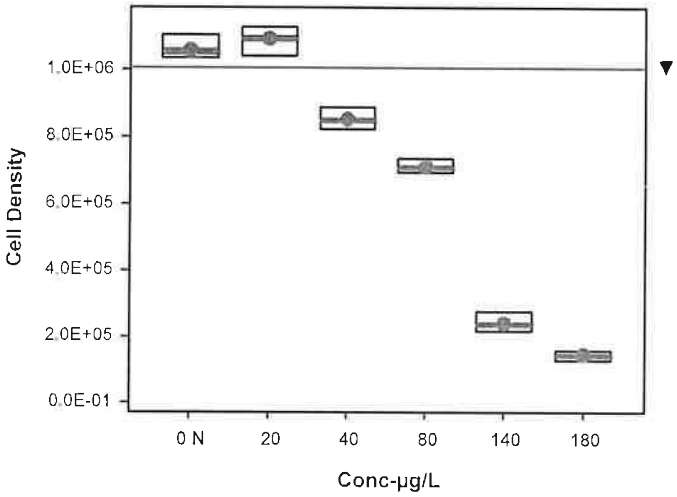
Aquatic Bioassay & Consulting Labs, Inc.

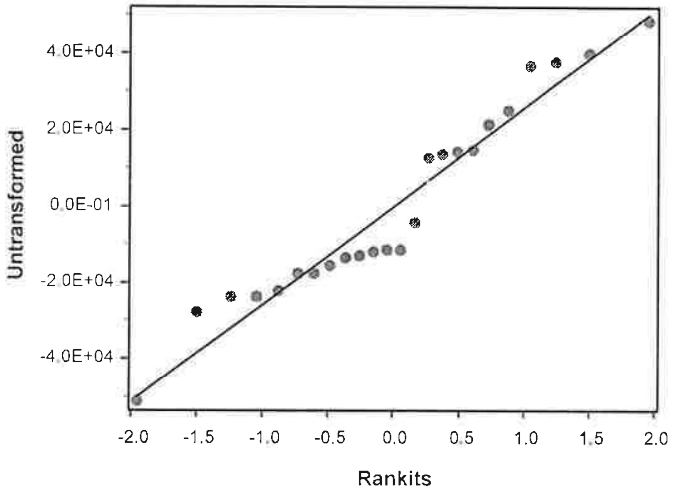
Analysis ID:	02-3719-8182	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	20 Jan-23 16:51	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Edit Date:	20 Jan-23 16:48	**MD5 Hash:**	8002C18F242E2CF77D044A91E3CE4461	**Editor ID:**	009-702-627-3

Cell Density Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.045E+6	1.033E+6	1.044E+6	1.105E+6
20		1.131E+6	1.078E+6	1.116E+6	1.040E+6
40		8.670E+5	8.290E+5	8.250E+5	8.890E+5
80		6.940E+5	7.330E+5	6.940E+5	7.260E+5
140		2.190E+5	2.370E+5	2.300E+5	2.790E+5
180		1.360E+5	1.610E+5	1.600E+5	1.320E+5

Graphics





CETIS Analytical Report

Selenastrum Growth Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	05-1997-3179	Endpoint:	Cell Density	CETIS Version:	CETISv2.1.4
Analyzed:	20 Jan-23 16:51	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Edit Date:	20 Jan-23 16:48	MD5 Hash:	8002C18F242E2CF77D044A91E3CE4461	Editor ID:	009-702-627-3
Batch ID:	19-4179-0418	Test Type:	Cell Growth	Analyst:	
Start Date:	12 Jan-23 13:24	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	16 Jan-23 13:10	Species:	Selenastrum capricornutum	Brine:	Not Applicable
Test Length:	96h	Taxon:	Chlorophyta	Source:	Aquatic Biosystems, CO Age: 7d
Sample ID:	01-0315-3386	Code:	SEL011223	Project:	REF TOX
Sample Date:	12 Jan-23 13:24	Material:	Cadmium chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	Internal Lab		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.03087	<<	0.2	Yes	Passes Criteria
Control Resp	1.06E+6	1.00E+6	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
IC15	34.55	31.57	37.91
IC20	39.4	35.65	48.58
IC25	53.36	40.71	62.3
IC40	88.59	84.67	92.36
IC50	102.3	99.22	105.6

Cell Density Summary

			Calculated Variate						Isotonic Variate	
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	4	1.057E+6	1.044E+6	1.033E+6	1.105E+6	3.09%	0.00%	1.074E+6	0.00%
20		4	1.091E+6	1.097E+6	1.040E+6	1.131E+6	3.74%	-3.26%	1.074E+6	0.00%
40		4	8.525E+5	8.480E+5	8.250E+5	8.890E+5	3.62%	19.33%	8.525E+5	20.62%
80		4	7.118E+5	7.047E+5	6.940E+5	7.330E+5	2.91%	32.65%	7.118E+5	33.72%
140		4	2.412E+5	2.335E+5	2.190E+5	2.790E+5	10.87%	77.17%	2.412E+5	77.54%
180		4	1.472E+5	1.480E+5	1.320E+5	1.610E+5	10.45%	86.07%	1.472E+5	86.29%

Cell Density Detail

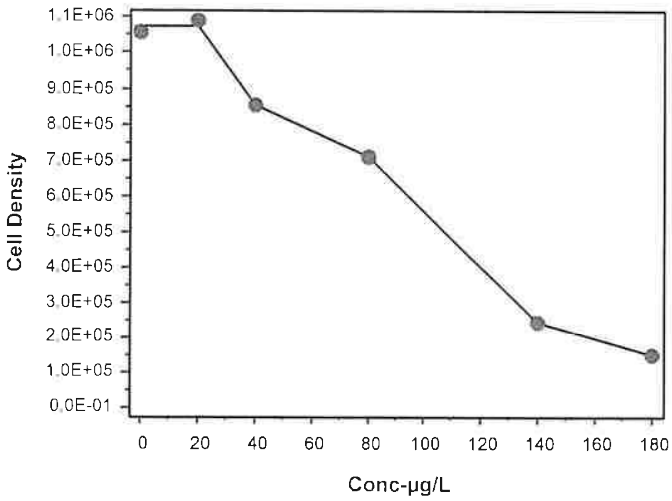
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.045E+6	1.033E+6	1.044E+6	1.105E+6
20		1.131E+6	1.078E+6	1.116E+6	1.040E+6
40		8.670E+5	8.290E+5	8.250E+5	8.890E+5
80		6.940E+5	7.330E+5	6.940E+5	7.260E+5
140		2.190E+5	2.370E+5	2.300E+5	2.790E+5
180		1.360E+5	1.610E+5	1.600E+5	1.320E+5

Selenastrum Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	05-1997-3179	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	20 Jan-23 16:51	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	20 Jan-23 16:48	**MD5 Hash:**	8002C18F242E2CF77D044A91E3CE4461	**Editor ID:**	009-702-627-3

Graphics



Selenastrum Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	19-4179-0418	Test Type:	Cell Growth	Analyst:		
Start Date:	12 Jan-23 13:24	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water	
Ending Date:	16 Jan-23 13:10	Species:	Selenastrum capricornutum	Brine:	Not Applicable	
Test Length:	96h	Taxon:	Chlorophyta	Source:	Aquatic Biosystems, CO	Age: 7d
Sample ID:	01-0315-3386	Code:	SEL011223	Project:	REF TOX	
Sample Date:	12 Jan-23 13:24	Material:	Cadmium chloride	Source:	Reference Toxicant	
Receipt Date:		CAS (PC):		Station:	REF TOX	
Sample Age:	---	Client:	Internal Lab			

Alkalinity (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	1	77	---	---	77	77	---	---	---	0
20		1	80	---	---	80	80	---	---	---	0
40		1	77	---	---	77	77	---	---	---	0
80		1	68	---	---	68	68	---	---	---	0
140		1	66	---	---	66	66	---	---	---	0
180		1	65	---	---	65	65	---	---	---	0
Overall		6	72.17	65.29	79.05	65	80	2.676	6.555	9.08%	0 (0%)

Conductivity-µmhos

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	497.6	487.7	507.5	489	510	1.591	7.956	1.60%	0
20		5	489.2	474.1	504.3	468	499	2.439	12.19	2.49%	0
40		5	453.6	434.3	472.9	445	481	3.104	15.52	3.42%	0
80		5	432.4	417.2	447.6	425	454	2.452	12.26	2.84%	0
140		5	407.8	390.9	424.7	400	432	2.722	13.61	3.34%	0
180		5	390.4	369.6	411.2	379	420	3.348	16.74	4.29%	0
Overall		30	445.2	429.5	460.8	379	510	7.646	41.88	9.41%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	1	118	---	---	118	118	---	---	---	0
20		1	110	---	---	110	110	---	---	---	0
40		1	125	---	---	125	125	---	---	---	0
80		1	95	---	---	95	95	---	---	---	0
140		1	98	---	---	98	98	---	---	---	0
180		1	93	---	---	93	93	---	---	---	0
Overall		6	106.5	92.63	120.4	93	125	5.396	13.22	12.41%	0 (0%)

pH-Units

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	7.96	7.849	8.071	7.8	8	0.01789	0.08944	1.12%	0
20		5	8	8	8	8	8	0	0	0.00%	0
40		5	8	8	8	8	8	0	0	0.00%	0
80		5	8	8	8	8	8	0	0	0.00%	0
140		5	7.98	7.924	8.036	7.9	8	0.008943	0.04472	0.56%	0
180		5	7.98	7.924	8.036	7.9	8	0.008943	0.04472	0.56%	0
Overall		30	7.987	7.97	8.003	7.8	8	0.007927	0.04342	0.54%	0 (0%)

Temperature-°C

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
20		5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
40		5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
80		5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
140		5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
180		5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
Overall		30	25.28	25.21	25.35	25	25.5	0.03601	0.1972	0.78%	0 (0%)

123391

Eurofins Calscience Irvine

570-123391 Chain of Custody

CHAIN OF CUSTODY FORM

1/2

Client Name/Address.	Project:
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 011 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel. 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									R/A	R	R	R	A	A	A	A	R	QRSW	
									ANALYSIS REQUIRED										
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals: (E200.7) As, Ba, B, Be, Co, Cr Fe, Mn, Ni, V Zn, Hardness as CaCO3 (E200.8) Ag, Cd, Cu, Pb, Sb, Se, Tl	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077)	Cr (VI), Total (E218.6)	Total Dissolved Metals: Mercury (E245.1)	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Comments
Outfall 011	Outfall011_20230110_Comp_F	1/10/2023 1105	WM	1 L Poly	1	None	190	No	X										Filter and preserve w/in 24hrs of receipt at lab.
			WM	borosilicate vials	1	None	320	No									X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall011_20230110_Comp	1/10/2023 1105	WM	500 mL Poly	1	NaOH	220	No		X									
			WM	2.5 Gal Cube	1	None	225	No		\	X								Unfiltered and unpreserved analysis, Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
			WM	1 L Glass Amber	1	None	230	No											
			*WM	1 Gal Cube	6	None	235	No				X							Only test if first or second rain events of the year. Deliver to ABC Labs in Ventura, CA *
			WM	40 mL VOA	3	HCl	240	No					X						
			WM	1 L Glass Amber	1	HCl	245	No						X					
			WM	1 L Glass Amber	1	None	255	No							X				
			WM	500 mL Poly	1	None	260	No								X			
			WM	1L Glass Amber	2	None	275	No										X	Extract within 24-Hours of sampling at Weck Labs at OF001,002,011, or 018.
	Outfall011_20230110_Comp_Extra	1/10/2023 1105	WM	40 mL VOA	3	HCl	240	No					H						Hold
			WM	1 L Glass Amber	1	None	255	No							H				Hold

Legend: A=Annual, R=Routine, QRSW=Quarterly Receiving Water

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-10 2023 1235	H.1	[signature]	1/10/23 1235 EC
[signature]	1/10/23 1755	EC	[signature]	1/10/23 1755
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour _____ 72 Hour _____ 10 Day ___X___
48 Hour _____ 5 Day _____ Normal _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: ___X___

* Hand-delivered to ABC Labs with Copy of COC

1
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2
3

2/3/2023
2019-2020 Rainy Season
Version 5

123391

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

2/2

Client Name/Address:
Haley & Aldrich
5333 Mission Center Rd Suite 300
San Diego, CA 92108

Eurofins Calscience Irvine Contact: Christian Bondoc
17461 Derian Ave Suite #100
Irvine CA 92614
Tel: 949-260-3218

Project:
Boeing-SSFL NPDES
Permit 2023
Annual Outfall [001, 002, 011, 018]
Outfall 011
Comp

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Project Manager: Katherine Miller
520.289.8606, 520.904.6944 (cell)

Sampler: Adrian Mobeka

Field Manager: Mark Dominick
978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R/A: Total Recoverable Metals (E200.7): As, Ba, B, Be, Co, Cr, Fe, Mn, Ni, V, Zn; Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	R: TCDD (and all congeners) (E1613B)	R: BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	R: Surfactants (MBAS) (SM5540C/E425.1)	R/A: Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	R: Turbidity TDS (SM2540C/E180.1)	R: TSS (160.2 (SM2540D))	R: Ammonia-N (E350.2)	A: Priority Pollutants-Pesticides+PCBs (E608)	A: Priority Pollutants-SVOCs (E625)	R: Total Recoverable Metals: Mercury (E245.1)	Comments
Outfall 011	Outfall011_20230110_Comp	1/10/2023 1105	WM	500 mL Poly	1	HNO_3	80	No	X											
			WM	1 L Glass Amber	2	None	110	No		X										
			WM	1 L Poly	1	None	115	No			X									
			WM	500 mL Poly	2	None	120	No				X								
			WM	500 mL Poly	2	None	125	No					X							48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X						48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X				
			WM	1 L Glass Amber	2	None	250	No									X			
			WM	1 L Glass Amber	2	None	175	No										X		
			WM	1 L Poly	1	None	185	No							X					
	Outfall011_20230110_Comp_Extra	1/10/2023 1105	WM	1 L Glass Amber	2	None	110	No		H										Hold
			WM	500 mL Poly	2	None	120	No				H								Hold
			WM	500 mL Poly	2	None	125	No					H							Hold
			WM	1 L Glass Amber	2	None	250	No								H				Hold
			WM	1 L Glass Amber	2	None	175	No									H			Hold

Legend A=Annual, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:	Company:
[signature]	1.10.2023 1235		[signature]	1/10/23 1235	EC
[signature]	1/10/23	1755 EC	[signature]	1/10/23	1755

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

1-7/1-7 2.3/2.3 SCH

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2/3/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-203785.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-123391-5
Address: 13715 Rider Trail North,	Due Date Requested: 2/10/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES Outfall 002 COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	905.0/LSC_Dist_Susp Trilium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall011_20230110_Comp (570-123391-2)	1/10/23	17:55 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I II, III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	01/11/23 12:38	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No
570-203785

Containers

Count	Container Type	Preservative

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123391-4

Login Number: 123391
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/13/2023 2:17:00 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 011 - COMP

JOB NUMBER

570-123391-5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

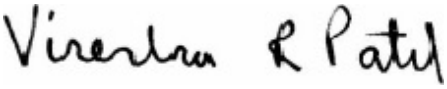
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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2/13/2023 2:17:00 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123391-5
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123391-5

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123391-5

Comments
No additional comments.

Receipt
The samples were received on 1/10/2023 5:58 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.3º C.

Receipt Exceptions

The reference method requires samples to be preserved to a pH of <2 SU. The following samples were received with insufficient preservation at a pH of >2 SU: Outfall011_20230110_Comp_F (570-123391-1), Outfall011_20230110_Comp (570-123391-2) and Outfall011_20230110_Comp_Extra (570-123391-3). 570-123391-Z-2. The sample was preserved to the appropriate pH in the laboratory.

RAD
Method 900.0: Gross Alpha and Gross Beta batch 597777
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall011_20230110_Comp (570-123391-2), (LCS 160-597777/2-A), (LCSB 160-597777/3-A), (MB 160-597777/1-A), (570-123670-K-1-F), (570-123670-K-1-I DU), (570-123670-K-1-G MS) and (570-123670-K-1-H MSBT)

Method 901.1: Gamma Prep Batch 160-597241
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Job ID: 570-123391-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

Outfall011_20230110_Comp (570-123391-2), (570-123234-AI-1-D) and (570-123234-AI-1-E DU)

Method 903.0: Radium-226 batch 598605
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall011_20230110_Comp (570-123391-2), (LCS 160-597154/2-A), (LCSD 160-597154/3-A) and (MB 160-597154/1-A)

Method 904.0: Radium-228 batch 597175
The LCS recovered at (126%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCSD 160-597175/3-A)

Method 904.0: Radium-228 batch 597175
The detection goal was not met for the following sample(s). Sample was prepped at a reduced volume due to the presence of matrix interferences: Outfall011_20230110_Comp (570-123391-2). Analytical results are reported with the detection limit achieved.

Method 904.0: Radium-228 batch 597175
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date
Outfall011_20230110_Comp (570-123391-2), (LCS 160-597175/2-A), (LCSD 160-597175/3-A) and (MB 160-597175/1-A)

Method 905: Strontium-90 batch 597176
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall011_20230110_Comp (570-123391-2), (LCS 160-597176/2-A), (LCSD 160-597176/3-A) and (MB 160-597176/1-A)

Method 906.0: Tritium 597488
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall011_20230110_Comp (570-123391-2), (LCS 160-597488/2-A), (MB 160-597488/1-A), (570-123038-U-2-B), (570-123038-U-2-C DU), (570-123414-Q-1-B) and (570-123414-Q-1-C MS)

Method A-01-R: Isotopic Uranium batch 597259
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall011_20230110_Comp (570-123391-2), (LCS 160-597259/2-A), (MB 160-597259/1-A), (570-123038-A-2-B) and (570-123038-A-2-C DU)

Method ExtChrom: Uranium Prep Batch 160-597259

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: Outfall011_20230110_Comp (570-123391-2).

Method PrecSep_0: Radium-228 Prep Batch 160-597175

The following sample was prepared at a reduced aliquot due to Matrix: Outfall011_20230110_Comp (570-123391-2). A laboratory control

Job ID: 570-123391-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21: Radium-226 Prep Batch 160-597154

The following sample was prepared at a reduced aliquot due to Matrix: Outfall011_20230110_Comp (570-123391-2). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 160-597176

The following sample was prepared at a reduced aliquot due to Matrix: Outfall011_20230110_Comp (570-123391-2). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-5
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Client Sample ID: Outfall011_20230110_Comp
Lab Sample ID: 570-123391-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-5
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: Outfall011_20230110_Comp
Date Collected: 01/10/23 11:05
Date Received: 01/10/23 17:58

Lab Sample ID: 570-123391-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.428	U	0.978	0.979	3.00	1.72	pCi/L	01/23/23 11:47	01/30/23 19:06	1
Gross Beta	**1.80**		0.634	0.659	4.00	0.819	pCi/L	01/23/23 11:47	01/30/23 19:06	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-5
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: Outfall011_20230110_Comp
Date Collected: 01/10/23 11:05
Date Received: 01/10/23 17:58

Lab Sample ID: 570-123391-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	7.04	U	7.37	7.42	20.0	8.59	pCi/L	01/17/23 13:13	02/06/23 17:29	1
Potassium-40	**136**		60.8	62.9		50.1	pCi/L	01/17/23 13:13	02/06/23 17:29	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-5
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: Outfall011_20230110_Comp
Date Collected: 01/10/23 11:05
Date Received: 01/10/23 17:58

Lab Sample ID: 570-123391-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.132	U	0.134	0.135	1.00	0.212	pCi/L	01/17/23 10:52	02/08/23 09:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.4*		*40 - 110*	*01/17/23 10:52*	*02/08/23 09:39*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: Outfall011_20230110_Comp
Date Collected: 01/10/23 11:05
Date Received: 01/10/23 17:58

Lab Sample ID: 570-123391-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.08	U G	0.733	0.739	1.00	1.09	pCi/L	01/17/23 11:26	01/24/23 11:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.4*		*40 - 110*	*01/17/23 11:26*	*01/24/23 11:26*	*1*
Y Carrier	*80.4*		*40 - 110*	*01/17/23 11:26*	*01/24/23 11:26*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-5
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: Outfall011_20230110_Comp
Date Collected: 01/10/23 11:05
Date Received: 01/10/23 17:58

Lab Sample ID: 570-123391-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	**1.25**		0.735	0.742	3.00	1.11	pCi/L	01/17/23 11:33	01/26/23 17:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*85.1*		*40 - 110*	*01/17/23 11:33*	*01/26/23 17:46*	*1*
Y Carrier	*51.6*		*40 - 110*	*01/17/23 11:33*	*01/26/23 17:46*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-5
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: Outfall011_20230110_Comp
Lab Sample ID: 570-123391-2
Date Collected: 01/10/23 11:05
Matrix: Water
Date Received: 01/10/23 17:58

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-30.6	U	165	165	500	309	pCi/L	01/19/23 12:02	01/20/23 23:31	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-5
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: Outfall011_20230110_Comp
Date Collected: 01/10/23 11:05
Date Received: 01/10/23 17:58

Lab Sample ID: 570-123391-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.324	U	0.356	0.356	1.00	0.405	pCi/L	01/17/23 16:09	01/25/23 14:42	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*76.3*		*30 - 110*	*01/17/23 16:09*	*01/25/23 14:42*	*1*

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-5
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
570-123391-2	Outfall011_20230110_Comp	84.4
LCS 160-597154/2-A	Lab Control Sample	87.7
LCSD 160-597154/3-A	Lab Control Sample Dup	91.3
MB 160-597154/1-A	Method Blank	94.7

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-123391-2	Outfall011_20230110_Comp	84.4	80.4
LCS 160-597175/2-A	Lab Control Sample	87.7	82.6
LCSD 160-597175/3-A	Lab Control Sample Dup	91.3	81.9
MB 160-597175/1-A	Method Blank	94.7	84.5

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-123391-2	Outfall011_20230110_Comp	85.1	51.6
LCS 160-597176/2-A	Lab Control Sample	82.2	72.1
LCSD 160-597176/3-A	Lab Control Sample Dup	82.8	70.3
MB 160-597176/1-A	Method Blank	79.4	74.0

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-123038-A-2-C DU	Duplicate	86.2
570-123391-2	Outfall011_20230110_Comp	76.3
LCS 160-597259/2-A	Lab Control Sample	87.1
MB 160-597259/1-A	Method Blank	85.3

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-597777/1-A
Matrix: Water
Analysis Batch: 598614

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597777

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.08001	U	0.636	0.636	3.00	1.19	pCi/L	01/23/23 11:47	01/30/23 19:04	1
Gross Beta	-0.2904	U	0.420	0.421	4.00	0.816	pCi/L	01/23/23 11:47	01/30/23 19:04	1

Lab Sample ID: LCS 160-597777/2-A
Matrix: Water
Analysis Batch: 598614

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597777

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	51.22		7.48	3.00	2.46	pCi/L	101	75 - 125

Lab Sample ID: LCSB 160-597777/3-A
Matrix: Water
Analysis Batch: 598614

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597777

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.7	67.77		7.31	4.00	0.875	pCi/L	92	75 - 125

Lab Sample ID: 570-123670-K-1-G MS
Matrix: Water
Analysis Batch: 598850

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 597777

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	0.308	U	50.5	50.97		7.16	3.00	1.38	pCi/L	100	60 - 140

Lab Sample ID: 570-123670-K-1-H MSBT
Matrix: Water
Analysis Batch: 598850

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 597777

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	2.89		73.7	75.66		8.09	4.00	0.820	pCi/L	99	60 - 140

Lab Sample ID: 570-123670-K-1-I DU
Matrix: Water
Analysis Batch: 598850

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597777

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	0.308	U	1.179	U	0.892	3.00	1.28	pCi/L	0.51	1
Gross Beta	2.89		2.634		0.775	4.00	0.892	pCi/L	0.16	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-597241/1-A
Matrix: Water
Analysis Batch: 599334

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597241

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-2.826	U	8.51	8.52	20.0	10.3	pCi/L	01/17/23 13:03	02/03/23 22:10	1
Potassium-40	-36.61	U	86.6	86.7		115	pCi/L	01/17/23 13:03	02/03/23 22:10	1

Lab Sample ID: LCS 160-597241/2-A
Matrix: Water
Analysis Batch: 599336

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597241

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	138000		16400		297	pCi/L	102	75 - 125
Cesium-137	41000	42160		5020	20.0	79.9	pCi/L	103	75 - 125
Cobalt-60	18200	18990		2260		44.3	pCi/L	105	75 - 125

Lab Sample ID: 570-123234-AI-1-E DU
Matrix: Water
Analysis Batch: 599354

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597241

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	-5.12	U	-0.5107	U	7.06	20.0	8.40	pCi/L	0.29	1
Potassium-40	-33.9	U	67.97		68.0		67.4	pCi/L	0.58	1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-597154/1-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597154

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.006957	U	0.0458	0.0458	1.00	0.0910	pCi/L	01/17/23 10:52	02/08/23 09:29	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.7*		*40 - 110*	*01/17/23 10:52*	*02/08/23 09:29*	*1*

Lab Sample ID: LCS 160-597154/2-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597154

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	11.79		1.20	1.00	0.0822	pCi/L	104	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*87.7*		*40 - 110*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-597154/3-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597154

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	11.35		1.16	1.00	0.0760	pCi/L	100	75 - 125	0.19	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*91.3*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-597175/1-A
Matrix: Water
Analysis Batch: 598066

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597175

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.05046	U	0.253	0.253	1.00	0.464	pCi/L	01/17/23 11:26	01/24/23 11:23	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.7*		*40 - 110*	*01/17/23 11:26*	*01/24/23 11:23*	*1*
Y Carrier	*84.5*		*40 - 110*	*01/17/23 11:26*	*01/24/23 11:23*	*1*

Lab Sample ID: LCS 160-597175/2-A
Matrix: Water
Analysis Batch: 598066

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597175

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.25	9.815		1.34	1.00	0.590	pCi/L	119	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*87.7*		*40 - 110*
Y Carrier	*82.6*		*40 - 110*

Lab Sample ID: LCSD 160-597175/3-A
Matrix: Water
Analysis Batch: 598066

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597175

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.25	10.40		1.37	1.00	0.516	pCi/L	126	75 - 125	0.21	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*91.3*		*40 - 110*
Y Carrier	*81.9*		*40 - 110*

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-597176/1-A
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597176

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.03721	U	0.223	0.223	3.00	0.408	pCi/L	01/17/23 11:33	01/26/23 17:45	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*79.4*		*40 - 110*	*01/17/23 11:33*	*01/26/23 17:45*	*1*
Y Carrier	*74.0*		*40 - 110*	*01/17/23 11:33*	*01/26/23 17:45*	*1*

Lab Sample ID: LCS 160-597176/2-A
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597176

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.38	7.564		0.882	3.00	0.355	pCi/L	103	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*82.2*		*40 - 110*
Y Carrier	*72.1*		*40 - 110*

Lab Sample ID: LCSD 160-597176/3-A
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597176

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.38	7.695		0.910	3.00	0.459	pCi/L	104	75 - 125	0.07	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*82.8*		*40 - 110*
Y Carrier	*70.3*		*40 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-597488/1-A
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597488

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-84.68	U	164	165	500	326	pCi/L	01/19/23 12:02	01/20/23 20:22	1

Lab Sample ID: LCS 160-597488/2-A
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597488

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2120	1848		381	500	324	pCi/L	87	75 - 125		

Method: 906.0 - Tritium, Total (LSC) (Continued)

Lab Sample ID: 570-123414-Q-1-C MS
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 597488

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium	-26.1	U	2120	1947		376	500	297	pCi/L	92	60 - 140		

Lab Sample ID: 570-123038-U-2-C DU
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597488

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Tritium	-83.3	U		-97.75	U	162	500	324	pCi/L			0.05	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-597259/1-A
Matrix: Water
Analysis Batch: 598217

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597259

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.05873	U	0.09433	0.09455	1.00	0.172	pCi/L	01/17/23 16:09	01/25/23 14:42	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*85.3*		*30 - 110*	*01/17/23 16:09*	*01/25/23 14:42*	*1*

Lab Sample ID: LCS 160-597259/2-A
Matrix: Water
Analysis Batch: 598218

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597259

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	12.19		1.46	1.00	0.151	pCi/L	96	75 - 125		
Uranium-238			13.0	13.33		1.56	1.00	0.135	pCi/L	102	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*87.1*		*30 - 110*

Lab Sample ID: 570-123038-A-2-C DU
Matrix: Water
Analysis Batch: 598230

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597259

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Total Uranium	0.128			0.07847	U	0.1118	1.00	0.163	pCi/L			0.22	1

Tracer	*DU %Yield*	*DU Qualifier*	*Limits*
Uranium-232	*86.2*		*30 - 110*

Rad

Prep Batch: 597154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	PrecSep-21	
MB 160-597154/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-597154/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-597154/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 597175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	PrecSep_0	
MB 160-597175/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-597175/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-597175/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 597176

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	PrecSep-7	
MB 160-597176/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-597176/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-597176/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 597241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	Fill_Geo-0	
MB 160-597241/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-597241/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-123234-AI-1-E DU	Duplicate	Total/NA	Water	Fill_Geo-0	

Prep Batch: 597259

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	ExtChrom	
MB 160-597259/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-597259/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-123038-A-2-C DU	Duplicate	Total/NA	Water	ExtChrom	

Prep Batch: 597488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	LSC_Dist_Susp	
MB 160-597488/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-597488/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
570-123414-Q-1-C MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
570-123038-U-2-C DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 597777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123391-2	Outfall011_20230110_Comp	Total/NA	Water	Evaporation	
MB 160-597777/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-597777/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-597777/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-123670-K-1-G MS	Matrix Spike	Total/NA	Water	Evaporation	
570-123670-K-1-H MSBT	Matrix Spike	Total/NA	Water	Evaporation	
570-123670-K-1-I DU	Duplicate	Total/NA	Water	Evaporation	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-5
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Client Sample ID: Outfall011_20230110_Comp
Lab Sample ID: 570-123391-2
Date Collected: 01/10/23 11:05
Matrix: Water
Date Received: 01/10/23 17:58

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Evaporation			200.00 mL	1.0 g	597777	01/23/23 11:47	MST	EET SL
Total/NA	Analysis	900.0		1			598612	01/30/23 19:06	SCB	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	597241	01/17/23 13:13	JML	EET SL
Total/NA	Analysis	901.1		1			599349	02/06/23 17:29	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	PrecSep-21			507.81 mL	1.0 g	597154	01/17/23 10:52	DJP	EET SL
Total/NA	Analysis	903.0		1			599672	02/08/23 09:39	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			507.81 mL	1.0 g	597175	01/17/23 11:26	DJP	EET SL
Total/NA	Analysis	904.0		1			598066	01/24/23 11:26	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-7			509.26 mL	1.0 g	597176	01/17/23 11:33	DJP	EET SL
Total/NA	Analysis	905		1			598283	01/26/23 17:46	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	LSC_Dist_Susp			100.27 mL	1.0 g	597488	01/19/23 12:02	ZR	EET SL
Total/NA	Analysis	906.0		1			597784	01/20/23 23:31	REV	EET SL
	Instrument ID: LSCAQUA									
Total/NA	Prep	ExtChrom			251.45 mL	1.0 mL	597259	01/17/23 16:09	SAC	EET SL
Total/NA	Analysis	A-01-R		1			598232	01/25/23 14:42	FLC	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 570-123391-5
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	02-09-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-5
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Job ID: 570-123391-5

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123391-2	Outfall011_20230110_Comp	Water	01/10/23 11:05	01/10/23 17:58

Eurofins Calscience Irvine

570-123391 Chain of Custody

CHAIN OF CUSTODY FORM

123391

1/2

Client Name/Address.	Project:
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 011 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel. 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									R/A	R	R	R	A	A	A	A	R	QRSW	
									ANALYSIS REQUIRED										
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals: (E200.7) As, Ba, B, Be, Co, Cr Fe, Mn, Ni, V Zn, Hardness as CaCO3 (E200.8) Ag, Cd, Cu, Pb, Sb, Se, Tl	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077)	Cr (VI), Total (E218.6)	Total Dissolved Metals: Mercury (E245.1)	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Comments
Outfall 011	Outfall011_20230110_Comp_F	1/10/2023 1105	WM	1 L Poly	1	None	190	No	X										Filter and preserve w/in 24hrs of receipt at lab.
			WM	borosilicate vials	1	None	320	No									X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall011_20230110_Comp	1/10/2023 1105	WM	500 mL Poly	1	NaOH	220	No		X									
			WM	2.5 Gal Cube	1	None	225	No		\	X								Unfiltered and unpreserved analysis, Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
			WM	1 L Glass Amber	1	None	230	No											
			WM	1 Gal Cube	6	None	235	No				X							Only test if first or second rain events of the year. Deliver to ABC Labs in Ventura, CA *
			WM	40 mL VOA	3	HCl	240	No					X						
			WM	1 L Glass Amber	1	HCl	245	No						X					
			WM	1 L Glass Amber	1	None	255	No							X				
			WM	500 mL Poly	1	None	260	No								X			
			WM	1L Glass Amber	2	None	275	No										X	Extract within 24-Hours of sampling at Weck Labs at OF001,002,011, or 018.
	Outfall011_20230110_Comp_Extra	1/10/2023 1105	WM	40 mL VOA	3	HCl	240	No					H						Hold
			WM	1 L Glass Amber	1	None	255	No							H				Hold

Legend: A=Annual, R=Routine, QRSW=Quarterly Receiving Water

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-10 2023 1235	H.1	[signature]	1/10/23 1235 EC
[signature]	1/10/23 1755	EC	[signature]	1/10/23 1755
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour _____ 72 Hour _____ 10 Day ___X___
48 Hour _____ 5 Day _____ Normal _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: ___X___

* Hand-delivered to ABC Labs with Copy of COC

1
2
3

2/13/2023

2019-2020 Rainy Season
Version 5

123391

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

2/2

Client Name/Address:
Haley & Aldrich
5333 Mission Center Rd Suite 300
San Diego, CA 92108

Eurofins Calscience Irvine Contact: Christian Bondoc
17461 Derian Ave Suite #100
Irvine CA 92614
Tel: 949-260-3218

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Sampler: Adrian Mobeka

Project:
Boeing-SSFL NPDES
Permit 2023
Annual Outfall [001, 002, 011, 018]
Outfall 011
Comp

Project Manager: Katherine Miller
520.289.8606, 520.904.6944 (cell)

Field Manager: Mark Dominick
978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED																
									R/A	R	R	R	R/A	R	R	R	A	A	R					
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals (E200.7): As, Ba, B, Be, Co, Cr, Fe, Mn, Ni, V, Zn; Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	Turbidity, TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608)	Priority Pollutants-SVOCs (E625)	Total Recoverable Metals: Mercury (E245.1)				Comments
Outfall 011	Outfall011_20230110_Comp	1/10/2023 1105	WM	500 mL Poly	1	HNO_3	80	No	X										X					
			WM	1 L Glass Amber	2	None	110	No		X														
			WM	1 L Poly	1	None	115	No			X													
			WM	500 mL Poly	2	None	120	No				X												
			WM	500 mL Poly	2	None	125	No					X											48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X										48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X								
			WM	1 L Glass Amber	2	None	250	No									X							
			WM	1 L Glass Amber	2	None	175	No										X						
			WM	1 L Poly	1	None	185	No							X									
	Outfall011_20230110_Comp_Extra	1/10/2023 1105	WM	1 L Glass Amber	2	None	110	No		H														Hold
			WM	500 mL Poly	2	None	120	No				H												Hold
			WM	500 mL Poly	2	None	125	No					H											Hold
			WM	1 L Glass Amber	2	None	250	No									H							Hold
			WM	1 L Glass Amber	2	None	175	No										H						Hold

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Legend A=Annual, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:	Company:
[signature]	1.10.2023 1235		[signature]	1/10/23 1235	EC
[signature]	1/10/23 1755	EC	[signature]	1/10/23 1755	

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

1-7/1-7 2.3/2.3 SCH

2/13/2023

2019-2020 Rainy Season
Version 5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-203785.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-123391-5
Address: 13715 Rider Trail North,	Due Date Requested: 2/10/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES Outfall 002 COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	905.0/LSC_Dist_Susp Trilium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall011_20230110_Comp (570-123391-2)	1/10/23	17:55 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I II, III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 01/11/23 12:38	Company EC	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No
570-203785

Containers

Count	Container Type	Preservative

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203785.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123391-5
Address: 13715 Rider Trail North, ,	Due Date Requested: 2/10/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 002 - COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Y - Trizma; Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	906.0/LSC_Dist_Susp Tritium	905_Sr-90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall011_20230110_Comp (570-123391-2)	1/10/23	17:55 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature] FED EX	01/11/23 12:38	EC	FED EX		
2	Relinquished by: FED EX	Date/Time:	Company	Received by: [signature]	JAN 16 2023 0843	ETAT
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Savannah Triage Checklist

- ☐ Date: 01/13/23
- ☐ Time: 1000
- ☐ Checked By: CJ
- ☐ Number of Coolers: 1
- ☐ Cooler Type: Hard Styrofoam Box
- ☐ Ice Type: Wet Dry GelPack None Other
- ☐ Received Via: Fed-Ex (PO) UPS ( ) Bus
  Client Drop Off US Mail Courier
  BlueStreak Dash Other
- ☐ Courier Tracking Number: _____
- ☐ Client: Calscience
- ☐ Thermometer ID: CUIR 32/31
- ☐ Uncorrected Cooler Temps (°C): ~~2.9~~ 2.4
- ☐ Correction Factor: 0.0/0.1
- ☐ Corrected Cooler Temps (°C): 2.4
- ☐ Other/ Comments:

_____

_____

- ☐ Foreign soil – Yes / No

FCU066:08.01.22:12

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123391-5

Login Number: 123391
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123391-5

Login Number: 123391
List Number: 3
Creator: Bohlmann, Jessica M

List Source: Eurofins St. Louis
List Creation: 01/16/23 10:48 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	False	570-123391-Z-2 was received with a pH >2 SU
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/11/2023 4:25:04 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 011 - COMP

JOB NUMBER

570-123391-6

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

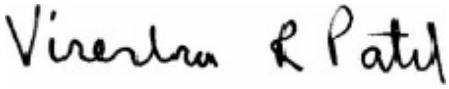
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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3/11/2023 4:25:04 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123391-6
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc. Job ID: 570-123391-6
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Job ID: 570-123391-6

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123391-6

Comments
No additional comments.

Receipt
The samples were received on 1/10/2023 5:58 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.3º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method EPA 608.3 Low Level - Endrin Aldehyde only (ug/L units) - MDL(J): This method was subcontracted to Weck Laboratories, Inc.. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123391-6
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method	Method Description	Protocol	Laboratory
608	EPA 608 Organochlorine Pesticides/PCBs i	EPA	Weck Lab

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Weck Lab = Weck Laboratories, Inc., 14859 East Clark Avenue, City of Industry, CA 917451396

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Job ID: 570-123391-6

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123391-3	Outfall011_20230110_Comp_Extra	Water	01/10/23 11:05	01/10/23 17:58

WECK LABORATORIES, INC.

Certificate of Analysis

FINAL REPORT

Work Orders: 3B02106

Project: 570-123391-6

Attn: Virendra Patel

Client: Eurofins Calscience - Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Report Date: 3/09/2023
Received Date: 2/2/2023
Turnaround Time: Normal
Phones: (949) 261-1022
Fax: (949) 260-3297
P.O. #:
Billing Code:

Dear Virendra Patel,

Enclosed are the results of analyses for samples received 2/02/23 with the Chain-of-Custody document. The samples were received in good condition, at 1.9 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: Outfall011_20230110_Comp_Extra (570-123391-3) Sampled: 01/10/23 11:05 by Client

3B02106-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 608.3			**Instr:** GC07				
Batch ID: W3B0399 **Preparation:** EPA 608/L-L SF			**Prepared:** 02/06/23 08:21				**Analyst:** RJG
Endrin aldehyde	ND	0.0019	0.0050	ug/l	1	02/15/23	O-09
Surrogate(s)							
Decachlorobiphenyl	*54%*		*33-133*	*Conc: 0.0509*		*02/15/23*	
Tetrachloro-meta-xylene	*37%*		*32-130*	*Conc: 0.0354*		*02/15/23*	

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

Quality Control Results

Chlorinated Pesticides and/or PCBs by GC/ECD

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3B0399-BLK1)					**Prepared: 02/06/23**	**Analyzed: 02/15/23**					
Endrin aldehyde	ND	0.0019	0.0050	ug/l							
Surrogate(s)											
Decachlorobiphenyl	*0.0675*			*ug/l*	*0.100*		*67*	*33-133*			
Tetrachloro-meta-xylene	*0.0595*			*ug/l*	*0.100*		*59*	*32-130*			
LCS (W3B0399-BS1)					**Prepared: 02/06/23**	**Analyzed: 02/15/23**					
Endrin aldehyde	0.0684	0.0019	0.0050	ug/l	0.100		68	18-130			
Surrogate(s)											
Decachlorobiphenyl	*0.0735*			*ug/l*	*0.100*		*74*	*33-133*			
Tetrachloro-meta-xylene	*0.0583*			*ug/l*	*0.100*		*58*	*32-130*			
LCS Dup (W3B0399-BSD1)					**Prepared: 02/06/23**	**Analyzed: 02/15/23**					
Endrin aldehyde	0.0791	0.0019	0.0050	ug/l	0.100		79	18-130	15	30	
Surrogate(s)											
Decachlorobiphenyl	*0.0808*			*ug/l*	*0.100*		*81*	*33-133*			
Tetrachloro-meta-xylene	*0.0731*			*ug/l*	*0.100*		*73*	*32-130*			

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634

www.wecklabs.com

Notes and Definitions

Item	Definition
O-09	This sample was received with the EPA recommended holding time expired.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Reviewed by:

Tiffany T. Felix For Rahul R. Nair
Project Manager

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
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Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

3PO2

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California	
Address: 14859 East Clark Avenue, ,	Due Date Requested: 2/14/2023	Analysis Requested	
City: City of Industry	TAT Requested (days):		
State, Zip: CA, 917451396			
Phone:	PO #:		
Email:	WO #:		
Project Name: Boeing SSFL NPDES - Outfall 002 - COMP	Project #: 44024446		
Site:	SSOW#:		

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (EPA 608.3 Low Level - Endrin Aldehyde only (ug/L units) - MDL(J))
Outfall011_20230110_Comp_Extra (570-123391-3)	1/10/23	11:05 Pacific		Water				X

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under cha
maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accred
attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are r***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time:	Company	Received by: Date/Time:

3B0:

ICOC No:
570-206007

Containers

Count	Container Type	Preservative
2	Amber Glass 1 liter - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
3	SUBCONTRACT	SUB (EPA 608.3 Low Level - Endrin Aldehyde only (ug/L units) - MDL(J))	Level IV, EQUIS 5C, MDL reporting w/J flag. Pe ug/L

COC	COC matches sample labels?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Receipt Information	Sample Temperature	1.9°C			
	Samples received on ice?	☒	☐		
	Ice Type (Blue/Wet)	WET			
	All samples intact?	☒	☐		
	Samples in proper containers?	☒	☐		
	Sufficient sample volume?	☒	☐		
	Samples intact?	☒	☐		
	Received within holding time?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Sample Preservation Verification?	Sample labels checked for correct preservation?	☒	☐	☐	
	VOC Headspace: (No) none, If Yes (See comment) 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☐	☒	☐ <6m
	pH verified upon receipt? Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 525.2<2; 6710B<2; 608.3 5-9	☐	☐	☒	pH paper Lot#
	Free Chlorine Tested <0.1	☒	☐	☐	Cl Test Strip Lot
	O&G pH <2 verified?	☐	☐	☐	pH paper Lot#
	pH adjusted for O&G	☐	☐	☐	pH Reading: Acid Lot# Amt added:
	Project Manager notified?	☐	☐	☒	

08

PM Comments

Sample Receipt Checklist Prepared by:

Signature: *Lester Abad* Date: 02/02/23

123391

Eurofins Calscience Irvine

570-123391 Chain of Custody

CHAIN OF CUSTODY FORM

1/2

Client Name/Address.	Project:
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 011 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel. 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									R/A	R	R	R	A	A	A	A	R	QRSW	
									ANALYSIS REQUIRED										
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals: (E200.7) As, Ba, B, Be, Co, Cr Fe, Mn, Ni, V Zn, Hardness as CaCO3 (E200.8) Ag, Cd, Cu, Pb, Sb, Se, Tl	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077)	Cr (VI), Total (E218.6)	Total Dissolved Metals: Mercury (E245.1)	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Comments
Outfall 011	Outfall011_20230110_Comp_F	1/10/2023 1105	WM	1 L Poly	1	None	190	No	X										Filter and preserve w/in 24hrs of receipt at lab.
			WM	borosilicate vials	1	None	320	No									X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall011_20230110_Comp	1/10/2023 1105	WM	500 mL Poly	1	NaOH	220	No		X									
			WM	2.5 Gal Cube	1	None	225	No		\	X								Unfiltered and unpreserved analysis, Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
			WM	1 L Glass Amber	1	None	230	No											
			*WM	1 Gal Cube	6	None	235	No				X							Only test if first or second rain events of the year Deliver to ABC Labs in Ventura, CA
			WM	40 mL VOA	3	HCl	240	No					X						
			WM	1 L Glass Amber	1	HCl	245	No						X					
			WM	1 L Glass Amber	1	None	255	No							X				
			WM	500 mL Poly	1	None	260	No								X			
			WM	1L Glass Amber	2	None	275	No										X	Extract within 24-Hours of sampling at Weck Labs at OF001,002,011, or 018.
	Outfall011_20230110_Comp_Extra	1/10/2023 1105	WM	40 mL VOA	3	HCl	240	No					H						Hold
			WM	1 L Glass Amber	1	None	255	No							H				Hold

Legend: A=Annual, R=Routine, QRSW=Quarterly Receiving Water

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-10 2023 1235	H.1	[signature]	1/10/23 1235 EC
[signature]	1/10/23 1755	EC	[signature]	1/10/23 1755
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour _____ 72 Hour _____ 10 Day ___X___
48 Hour _____ 5 Day _____ Normal _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: ___X___

* Hand-delivered to ABC Labs with Copy of COC

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3/11/2023

2019-2020 Rainy Season
Version 5

123391

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

2/2

Client Name/Address:
Haley & Aldrich
5333 Mission Center Rd Suite 300
San Diego, CA 92108

Eurofins Calscience Irvine Contact: Christian Bondoc
17461 Derian Ave Suite #100
Irvine CA 92614
Tel: 949-260-3218

Project:
Boeing-SSFL NPDES
Permit 2023
Annual Outfall [001, 002, 011, 018]
Outfall 011
Comp

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Project Manager: Katherine Miller
520.289.8606, 520.904.6944 (cell)

Sampler: Adrian Mobeka

Field Manager: Mark Dominick
978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R/A: Total Recoverable Metals (E200.7): As, Ba, B, Be Co, Cr Fe Mn Ni, V Zn Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se Tl	R: TCDD (and all congeners) (E1613B)	R: BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	R: Surfactants (MBAS) (SM5540C/E425.1)	R/A: Cl- F- SO4 Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	R: Turbidity TDS (SM2540C/E180.1)	R: TSS (160.2 (SM2540D))	R: Ammonia-N (E350.2)	A: Priority Pollutants-Pesticides+PCBs (E608)	A: Priority Pollutants-SVOCs (E625)	R: Total Recoverable Metals: Mercury (E245.1)	Comments
Outfall 011	Outfall011_20230110_Comp	1/10/2023 1105	WM	500 mL Poly	1	HNO_3	80	No	X											
			WM	1 L Glass Amber	2	None	110	No		X										
			WM	1 L Poly	1	None	115	No			X									
			WM	500 mL Poly	2	None	120	No				X								
			WM	500 mL Poly	2	None	125	No					X							48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X						48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X				
			WM	1 L Glass Amber	2	None	250	No									X			
			WM	1 L Glass Amber	2	None	175	No										X		
			WM	1 L Poly	1	None	185	No							X					
	Outfall011_20230110_Comp_Extra	1/10/2023 1105	WM	1 L Glass Amber	2	None	110	No		H										Hold
			WM	500 mL Poly	2	None	120	No				H								Hold
			WM	500 mL Poly	2	None	125	No					H							Hold
			WM	1 L Glass Amber	2	None	250	No									H			Hold
			WM	1 L Glass Amber	2	None	175	No										H		Hold

Legend A=Annual, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1.10.2023 1235		[signature]	1/10/23 1235 EC
[signature]	1/10/23	1755 EC	[signature]	1/10/23 1755

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

1-7/1-7 2.3/2.3 SCH

2 Page 15 of 16 3

3/11/2023

2019-2020 Rainy Season
Version 5

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123391-6

Login Number: 123391
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 011 - GRAB

JOB NUMBER

570-124229-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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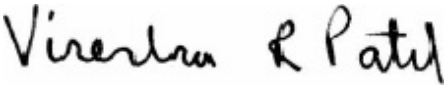
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-124229-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - GRAB

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Job ID: 570-124229-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - GRAB

Job ID: 570-124229-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124229-1

Comments
No additional comments.

Receipt
The samples were received on 1/16/2023 5:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.3º C.

Receipt Exceptions

Method SM 2540F: The following sample was received outside of holding time SS: Outfall011_20230115_Grab (570-124229-1).

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method SM 2540F: Insufficient sample volume was available to perform a sample duplicate (DUP) associated with analytical batch 570-296446.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 1664A: The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-296834.
Method: 1664.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124229-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - GRAB

Client Sample ID: Outfall011_20230115_Grab
Lab Sample ID: 570-124229-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
HEM: Oil and Grease	1.3		0.97	0.50	mg/L	1		1664A	Total/NA
Specific Conductance	110		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA

Client Sample ID: TB-20230115
Lab Sample ID: 570-124229-3

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-124229-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - GRAB

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: Outfall011_20230115_Grab
Lab Sample ID: 570-124229-1
Date Collected: 01/15/23 14:00
Matrix: Water
Date Received: 01/16/23 17:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/17/23 02:53	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/17/23 02:53	1
Trichloroethene	ND		0.50	0.17	ug/L			01/17/23 02:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*60 - 140*		*01/17/23 02:53*	*1*
Toluene-d8 (Surr)	*99*		*60 - 140*		*01/17/23 02:53*	*1*

Client Sample ID: TB-20230115
Lab Sample ID: 570-124229-3
Date Collected: 01/15/23 14:00
Matrix: Water
Date Received: 01/16/23 17:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/17/23 01:22	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/17/23 01:22	1
Trichloroethene	ND		0.50	0.17	ug/L			01/17/23 01:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*60 - 140*		*01/17/23 01:22*	*1*
Toluene-d8 (Surr)	*99*		*60 - 140*		*01/17/23 01:22*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-124229-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - GRAB

General Chemistry

Client Sample ID: Outfall011_20230115_Grab
Lab Sample ID: 570-124229-1
Date Collected: 01/15/23 14:00
Matrix: Water
Date Received: 01/16/23 17:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM: Oil and Grease (1664A)	**1.3**		0.97	0.50	mg/L		01/18/23 15:01	01/19/23 17:07	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance (SM 2510B)	**110**		1.0	1.0	umhos/cm			01/27/23 16:56	1
Settleable Solids (SM 2540F)	ND		0.10	0.10	mL/L			01/17/23 12:53	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124229-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - GRAB

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		BFB	TOL								
Lab Sample ID	Client Sample ID	(60-140)	(60-140)								
570-124229-1	Outfall011_20230115_Grab	105	99								
570-124229-3	TB-20230115	101	99								
LCS 570-296226/1003	Lab Control Sample	99	100								
LCSD 570-296226/4	Lab Control Sample Dup	102	100								
MB 570-296226/6	Method Blank	97	101								

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-296226/6
Matrix: Water
Analysis Batch: 296226

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/16/23 19:20	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/16/23 19:20	1
Trichloroethene	ND		0.50	0.17	ug/L			01/16/23 19:20	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*60 - 140*		*01/16/23 19:20*	*1*
Toluene-d8 (Surr)	*101*		*60 - 140*		*01/16/23 19:20*	*1*

Lab Sample ID: LCS 570-296226/1003
Matrix: Water
Analysis Batch: 296226

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1-Dichloroethene			10.0	12.0		ug/L		120	50 - 150		
1,2-Dichloroethane			10.0	11.7		ug/L		117	70 - 130		
Trichloroethene			10.0	12.0		ug/L		120	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*60 - 140*
Toluene-d8 (Surr)	*100*		*60 - 140*

Lab Sample ID: LCSD 570-296226/4
Matrix: Water
Analysis Batch: 296226

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene			10.0	10.6		ug/L		106	50 - 150	12	32
1,2-Dichloroethane			10.0	11.9		ug/L		119	70 - 130	2	49
Trichloroethene			10.0	11.2		ug/L		112	65 - 135	7	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*60 - 140*
Toluene-d8 (Surr)	*100*		*60 - 140*

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-296834/1-A
Matrix: Water
Analysis Batch: 297188

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296834

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM: Oil and Grease	ND		1.0	0.51	mg/L		01/18/23 15:01	01/19/23 17:07	1

Method: 1664A - HEM and SGT-HEM (Continued)

Lab Sample ID: LCS 570-296834/2-A
Matrix: Water
Analysis Batch: 297188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296834

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM: Oil and Grease	40.0	36.1		mg/L		90	78 - 114

Lab Sample ID: LCSD 570-296834/3-A
Matrix: Water
Analysis Batch: 297188

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296834

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM: Oil and Grease	40.0	38.4		mg/L		96	78 - 114	6	18

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-299286/9
Matrix: Water
Analysis Batch: 299286

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			01/27/23 16:01	1

Lab Sample ID: 570-125266-A-4 DU
Matrix: Water
Analysis Batch: 299286

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Specific Conductance	7300		7300		umhos/cm		0	25

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124229-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - GRAB

GC/MS VOA

Analysis Batch: 296226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124229-1	Outfall011_20230115_Grab	Total/NA	Water	624.1	
570-124229-3	TB-20230115	Total/NA	Water	624.1	
MB 570-296226/6	Method Blank	Total/NA	Water	624.1	
LCS 570-296226/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-296226/4	Lab Control Sample Dup	Total/NA	Water	624.1	

General Chemistry

Analysis Batch: 296446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124229-1	Outfall011_20230115_Grab	Total/NA	Water	SM 2540F	

Prep Batch: 296834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124229-1	Outfall011_20230115_Grab	Total/NA	Water	1664A	
MB 570-296834/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-296834/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-296834/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 297188

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124229-1	Outfall011_20230115_Grab	Total/NA	Water	1664A	296834
MB 570-296834/1-A	Method Blank	Total/NA	Water	1664A	296834
LCS 570-296834/2-A	Lab Control Sample	Total/NA	Water	1664A	296834
LCSD 570-296834/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	296834

Analysis Batch: 299286

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124229-1	Outfall011_20230115_Grab	Total/NA	Water	SM 2510B	
MB 570-299286/9	Method Blank	Total/NA	Water	SM 2510B	
570-125266-A-4 DU	Duplicate	Total/NA	Water	SM 2510B	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124229-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - GRAB

Client Sample ID: Outfall011_20230115_Grab
Lab Sample ID: 570-124229-1
Date Collected: 01/15/23 14:00
Matrix: Water
Date Received: 01/16/23 17:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	296226	01/17/23 02:53	A1W	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Prep	1664A			1027 mL	1000 mL	296834	01/18/23 15:01	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			297188	01/19/23 17:07	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									
Total/NA	Analysis	SM 2510B		1			299286	01/27/23 16:56	BDH9	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	296446	01/17/23 12:53	GG0B	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB-20230115
Lab Sample ID: 570-124229-3
Date Collected: 01/15/23 14:00
Matrix: Water
Date Received: 01/16/23 17:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	296226	01/17/23 01:22	A1W	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124229-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - GRAB

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124229-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - GRAB

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4

Protocol References:

1664A = EPA-821-98-002

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 011 - GRAB

Job ID: 570-124229-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124229-1	Outfall011_20230115_Grab	Water	01/15/23 14:00	01/16/23 17:00
570-124229-3	TB-20230115	Water	01/15/23 14:00	01/16/23 17:00

124229

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-124229 Chain of Custody

TRIP TB

Client Name/Address.	Project:	Field Readings	Meter serial #
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Grab	Field Readings: (Include units) Time of Readings: 1400 DO 12.44 mg/L pH 6.90 pH unit Temp 51.7 °C/°F	
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218			
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	Field readings QC Checked by: [signature] Date/Time: 1-16-2023/0700	
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)		

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Oil & Grease (E1664A-HEM) R	VOCs - only 1,1-DCE, 1,2-DCA, TCE (E624) R	Settleable Solids (E160.5 (SM2540F)) R	Conductivity (SM2510B / E120.1) R	Comments
Outfall 011 ①	Outfall011_20230115_Grab	1/15/2023 1400	WM	1 L Glass Amber	2	HCl	15	No	X				
			WM	40 mL VOA	3	HCl	30	No		X			
			WM	1L Poly	1	None	70	No			X		
			WM	500 mL Poly	1	None	75	No				X	
②	Outfall011_20230115_Grab_Extra	1/15/2023 1400	WM	1 L Glass Amber	2	HCl	15	No	H				Hold
			WM	40 mL VOA	3	HCl	30	No		H			Hold
			WM	500 mL Poly	1	None	75	No				H	Hold
Trip Blanks ③	TB-20230115	1/15/2023 1400	WQ	40 mL VOA	3	HCl	30	No		X			

Legend: R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-16-2023/1430	H.A	[signature]	EC 1-16-23 14:30
[signature]	1-16-23 17:00	EC	[signature]	EC 1-16-23 17.00

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: __X__

0.3/0.3 soil

2/3/2023
2019-2020 Rainy Season
Version 4

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124229-1

Login Number: 124229
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/16/2023 3:41:00 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 011 - Comp

JOB NUMBER

570-124392-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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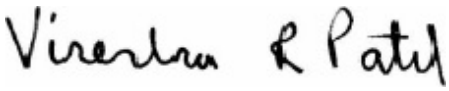
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
BB	Sample > 4X spike concentration
EY	Result exceeds normal dynamic range; reported as a min. est.
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124392-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124392-1

Comments
No additional comments.

Receipt
The samples were received on 1/17/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 1.9º C.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

HPLC/IC
Method 300.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 570-296620 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Chloride and Sulfate in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

Method 300.0: Due to the high concentration of Chloride and Sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 570-296620 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for Nitrite-N for analytical batch 570-296621 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 314.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 570-297043 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Perchlorate in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 200.7 Rev 4.4: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision of Iron for preparation batch 570-297274 and analytical batch 570-297463 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) was within acceptance limits

Method 200.8: The method blank for preparation batch 570-296798 and analytical batch 570-297048 contained Lead above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 200.8: The method blank for preparation batch 570-297278 and analytical batch 570-297371 contained Iron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: Outfall011_20230117_Comp_F (570-124392-3), (570-124392-C-3 MS) and (570-124392-C-3 MSD). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: Outfall011_20230117_Comp_F (570-124392-3), (570-124392-C-3 MS) and (570-124392-C-3 MSD). The sample(s) was filtered prior to

Job ID: 570-124392-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-296981. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. 608LL

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Client Sample ID: Outfall011_20230117_Comp
Lab Sample ID: 570-124392-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.4		1.0	0.36	mg/L	1		300.0	Total/NA
Nitrate as N	0.78		0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate	3.9		1.0	0.24	mg/L	1		300.0	Total/NA
Nitrate Nitrite as N	0.78		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Copper	4.9		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	0.85	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Iron	780	MB	20	3.7	ug/L	1		200.8	Total Recoverable
Arsenic	1.8		1.0	0.16	ug/L	1		200.8	Total Recoverable
Zinc	7.1	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Manganese	19		1.0	0.41	ug/L	1		200.8	Total Recoverable
Turbidity	20		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Dissolved Solids	110		10	8.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	7.6		1.0	0.83	mg/L	1		SM 2540D	Total/NA
MBAS	0.14	J,DX	0.30	0.054	mg/L	1		SM 5540C	Total/NA
Biochemical Oxygen Demand	1.0	J,DX	2.0	1.0	mg/L	1		SM5210B	Total/NA

Client Sample ID: Outfall011_20230117_Comp_F
Lab Sample ID: 570-124392-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	4.8	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.22	J,DX BU MB	1.0	0.12	ug/L	1		200.8	Dissolved
Iron	110	BU	20	3.7	ug/L	1		200.8	Dissolved
Arsenic	1.3	BU	1.0	0.16	ug/L	1		200.8	Dissolved
Zinc	3.9	J,DX BU	20	2.8	ug/L	1		200.8	Dissolved
Manganese	5.1	BU	1.0	0.41	ug/L	1		200.8	Dissolved

This Detection Summary does not include radiochemical test results.

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: Outfall011_20230117_Comp
Lab Sample ID: 570-124392-1
Date Collected: 01/17/23 08:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		0.96	0.13	ug/L		01/19/23 05:37	01/30/23 17:29	1
2,4-Dinitrotoluene	ND		0.19	0.11	ug/L		01/19/23 05:37	01/30/23 17:29	1
Bis(2-ethylhexyl) phthalate	ND		4.8	3.4	ug/L		01/19/23 05:37	01/30/23 17:29	1
N-Nitrosodimethylamine	ND		0.19	0.18	ug/L		01/19/23 05:37	01/30/23 17:29	1
Pentachlorophenol	ND		0.96	0.81	ug/L		01/19/23 05:37	01/30/23 17:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*59*		*31 - 120*	*01/19/23 05:37*	*01/30/23 17:29*	*1*
Phenol-d6 (Surr)	*35*		*10 - 120*	*01/19/23 05:37*	*01/30/23 17:29*	*1*
p-Terphenyl-d14 (Surr)	*76*		*45 - 120*	*01/19/23 05:37*	*01/30/23 17:29*	*1*
2,4,6-Tribromophenol	*87*		*28 - 127*	*01/19/23 05:37*	*01/30/23 17:29*	*1*
2-Fluorophenol	*48*		*17 - 120*	*01/19/23 05:37*	*01/30/23 17:29*	*1*
Nitrobenzene-d5	*66*		*27 - 120*	*01/19/23 05:37*	*01/30/23 17:29*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Method: 40CFR136A 608.3 - Organochlorine Pesticides in Water

Client Sample ID: Outfall011_20230117_Comp
Lab Sample ID: 570-124392-1
Date Collected: 01/17/23 08:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		01/19/23 08:08	01/20/23 17:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*55*		*20 - 139*	*01/19/23 08:08*	*01/20/23 17:08*	*1*
DCB Decachlorobiphenyl (Surr)	*30*		*20 - 154*	*01/19/23 08:08*	*01/20/23 17:08*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: Outfall011_20230117_Comp
Lab Sample ID: 570-124392-1
Date Collected: 01/17/23 08:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.4**		1.0	0.36	mg/L			01/18/23 08:34	1
Nitrite as N	ND		0.10	0.043	mg/L			01/18/23 08:34	1
Nitrate as N	**0.78**		0.10	0.020	mg/L			01/18/23 08:34	1
Sulfate	**3.9**		1.0	0.24	mg/L			01/18/23 08:34	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: Outfall011_20230117_Comp
Lab Sample ID: 570-124392-1
Date Collected: 01/17/23 08:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/20/23 05:01	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: Outfall011_20230117_Comp
Lab Sample ID: 570-124392-1
Date Collected: 01/17/23 08:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	0.78		0.10	0.020	mg/L			01/24/23 12:20	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: Outfall011_20230117_Comp
Lab Sample ID: 570-124392-1
Date Collected: 01/17/23 08:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/20/23 06:26	01/20/23 10:09	1
Copper	**4.9**		2.0	0.32	ug/L		01/20/23 06:26	01/20/23 10:09	1
Lead	**0.85**	**J,DX**	1.0	0.12	ug/L		01/20/23 06:26	01/20/23 10:09	1
Selenium	ND		2.0	0.52	ug/L		01/20/23 06:26	01/20/23 10:09	1
Iron	**780**	**MB**	20	3.7	ug/L		01/20/23 06:26	01/20/23 10:09	1
Arsenic	**1.8**		1.0	0.16	ug/L		01/20/23 06:26	01/20/23 10:09	1
Zinc	**7.1**	**J,DX**	20	2.8	ug/L		01/20/23 06:26	01/20/23 10:09	1
Manganese	**19**		1.0	0.41	ug/L		01/20/23 06:26	01/20/23 10:09	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: Outfall011_20230117_Comp_F
Lab Sample ID: 570-124392-3
Date Collected: 01/17/23 08:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			01/19/23 10:38	1
Copper	**4.8**	**BU**	2.0	0.32	ug/L			01/19/23 10:38	1
Lead	**0.22**	**J,DX BU MB**	1.0	0.12	ug/L			01/19/23 10:38	1
Selenium	ND	BU	2.0	0.52	ug/L			01/19/23 10:38	1
Iron	**110**	**BU**	20	3.7	ug/L			01/19/23 10:38	1
Arsenic	**1.3**	**BU**	1.0	0.16	ug/L			01/19/23 10:38	1
Zinc	**3.9**	**J,DX BU**	20	2.8	ug/L			01/19/23 10:38	1
Manganese	**5.1**	**BU**	1.0	0.41	ug/L			01/19/23 10:38	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: Outfall011_20230117_Comp
Lab Sample ID: 570-124392-1
Date Collected: 01/17/23 08:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		01/19/23 16:54	01/20/23 13:54	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: Outfall011_20230117_Comp_F
Lab Sample ID: 570-124392-3
Date Collected: 01/17/23 08:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	BU	0.20	0.12	ug/L		01/19/23 17:19	01/20/23 14:53	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

General Chemistry

Client Sample ID: Outfall011_20230117_Comp
Lab Sample ID: 570-124392-1
Date Collected: 01/17/23 08:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	ND		0.075	0.032	mg/L		01/26/23 09:45	01/26/23 12:26	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			01/23/23 14:17	1
Turbidity (SM 2130B)	**20**		0.05	0.05	NTU			01/17/23 22:17	1
Total Dissolved Solids (SM 2540C)	**110**		10	8.7	mg/L			01/20/23 17:14	1
Total Suspended Solids (SM 2540D)	**7.6**		1.0	0.83	mg/L			01/20/23 13:11	1
MBAS (SM 5540C)	**0.14**	**J,DX**	0.30	0.054	mg/L		01/18/23 16:35	01/18/23 18:04	1
Biochemical Oxygen Demand (SM5210B)	**1.0**	**J,DX**	2.0	1.0	mg/L			01/18/23 17:17	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	PHL6	TPHd14	TBP	2FP	NBZ
Lab Sample ID	Client Sample ID	(31-120)	(10-120)	(45-120)	(28-127)	(17-120)	(27-120)
570-124392-1	Outfall011_20230117_Comp	59	35	76	87	48	66
LCS 570-296958/2-A	Lab Control Sample	91	46	104	115	65	87
LCSD 570-296958/3-A	Lab Control Sample Dup	81	42	103	114	61	81
MB 570-296958/1-A	Method Blank	58	31	77	82	42	62

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)											
		TCX1	DCB1										
Lab Sample ID	Client Sample ID	(20-139)	(20-154)										
570-124392-1	Outfall011_20230117_Comp	55	30										
LCS 570-296981/2-A	Lab Control Sample	84	94										
LCSD 570-296981/3-A	Lab Control Sample Dup	85	97										
MB 570-296981/1-A	Method Blank	84	93										

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-296958/1-A
Matrix: Water
Analysis Batch: 299507

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296958

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		01/19/23 05:37	01/30/23 15:24	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		01/19/23 05:37	01/30/23 15:24	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		01/19/23 05:37	01/30/23 15:24	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		01/19/23 05:37	01/30/23 15:24	1
Pentachlorophenol	ND		1.0	0.84	ug/L		01/19/23 05:37	01/30/23 15:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*58*		*31 - 120*	*01/19/23 05:37*	*01/30/23 15:24*	*1*
Phenol-d6 (Surr)	*31*		*10 - 120*	*01/19/23 05:37*	*01/30/23 15:24*	*1*
p-Terphenyl-d14 (Surr)	*77*		*45 - 120*	*01/19/23 05:37*	*01/30/23 15:24*	*1*
2,4,6-Tribromophenol	*82*		*28 - 127*	*01/19/23 05:37*	*01/30/23 15:24*	*1*
2-Fluorophenol	*42*		*17 - 120*	*01/19/23 05:37*	*01/30/23 15:24*	*1*
Nitrobenzene-d5	*62*		*27 - 120*	*01/19/23 05:37*	*01/30/23 15:24*	*1*

Lab Sample ID: LCS 570-296958/2-A
Matrix: Water
Analysis Batch: 299507

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296958

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4,6-Trichlorophenol	20.0	22.9		ug/L		114	52 - 129
2,4-Dinitrotoluene	20.0	24.3		ug/L		121	48 - 127
Bis(2-ethylhexyl) phthalate	20.0	24.1		ug/L		120	29 - 137
N-Nitrosodimethylamine	20.0	12.1		ug/L		61	20 - 120
Pentachlorophenol	20.0	17.7		ug/L		89	38 - 152

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*91*		*31 - 120*
Phenol-d6 (Surr)	*46*		*10 - 120*
p-Terphenyl-d14 (Surr)	*104*		*45 - 120*
2,4,6-Tribromophenol	*115*		*28 - 127*
2-Fluorophenol	*65*		*17 - 120*
Nitrobenzene-d5	*87*		*27 - 120*

Lab Sample ID: LCSD 570-296958/3-A
Matrix: Water
Analysis Batch: 299507

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296958

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4,6-Trichlorophenol	20.0	21.2		ug/L		106	52 - 129	7	35
2,4-Dinitrotoluene	20.0	23.3		ug/L		116	48 - 127	4	25
Bis(2-ethylhexyl) phthalate	20.0	25.8		ug/L		129	29 - 137	7	50
N-Nitrosodimethylamine	20.0	11.3		ug/L		56	20 - 120	7	21
Pentachlorophenol	20.0	19.2		ug/L		96	38 - 152	8	52

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*81*		*31 - 120*
Phenol-d6 (Surr)	*42*		*10 - 120*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-296958/3-A
Matrix: Water
Analysis Batch: 299507

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296958

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
p-Terphenyl-d14 (Surr)	*103*		*45 - 120*
2,4,6-Tribromophenol	*114*		*28 - 127*
2-Fluorophenol	*61*		*17 - 120*
Nitrobenzene-d5	*81*		*27 - 120*

Method: 608.3 - Organochlorine Pesticides in Water

Lab Sample ID: MB 570-296981/1-A
Matrix: Water
Analysis Batch: 297380

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296981

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		01/19/23 08:08	01/20/23 13:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*84*		*20 - 139*	*01/19/23 08:08*	*01/20/23 13:56*	*1*
DCB Decachlorobiphenyl (Surr)	*93*		*20 - 154*	*01/19/23 08:08*	*01/20/23 13:56*	*1*

Lab Sample ID: LCS 570-296981/2-A
Matrix: Water
Analysis Batch: 297380

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296981

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
alpha-BHC			0.0333	0.0333		ug/L		100	37 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*84*		*20 - 139*
DCB Decachlorobiphenyl (Surr)	*94*		*20 - 154*

Lab Sample ID: LCSD 570-296981/3-A
Matrix: Water
Analysis Batch: 297380

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296981

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
alpha-BHC			0.0333	0.0321		ug/L		96	37 - 140	4	36

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*85*		*20 - 139*
DCB Decachlorobiphenyl (Surr)	*97*		*20 - 154*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-296620/5
Matrix: Water
Analysis Batch: 296620

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			01/18/23 05:12	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 570-296620/5
Matrix: Water
Analysis Batch: 296620

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.24	mg/L			01/18/23 05:12	1

Lab Sample ID: LCS 570-296620/6
Matrix: Water
Analysis Batch: 296620

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			50.0	50.7		mg/L		101	90 - 110		
Sulfate			50.0	50.8		mg/L		102	90 - 110		

Lab Sample ID: LCSD 570-296620/7
Matrix: Water
Analysis Batch: 296620

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			50.0	50.6		mg/L		101	90 - 110	0	15
Sulfate			50.0	50.7		mg/L		101	90 - 110	0	15

Lab Sample ID: 570-124485-D-3 MS
Matrix: Water
Analysis Batch: 296620

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	370	EY	50.0	414	EY BB	mg/L		90	80 - 120		
Sulfate	1400	EY	50.0	1450	EY BB	mg/L		67	80 - 120		

Lab Sample ID: 570-124485-D-3 MSD
Matrix: Water
Analysis Batch: 296620

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	370	EY	50.0	416	EY BB	mg/L		94	80 - 120	0	20
Sulfate	1400	EY	50.0	1450	EY BB	mg/L		69	80 - 120	0	20

Lab Sample ID: MB 570-296621/5
Matrix: Water
Analysis Batch: 296621

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			01/18/23 05:12	1
Nitrate as N	ND		0.10	0.020	mg/L			01/18/23 05:12	1

Lab Sample ID: LCS 570-296621/6
Matrix: Water
Analysis Batch: 296621

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrite as N			2.50	2.70		mg/L		108	90 - 110		
Nitrate as N			5.00	5.08		mg/L		102	90 - 110		

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 570-296621/7
Matrix: Water
Analysis Batch: 296621

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N			2.50	2.70		mg/L		108	90 - 110	0	15
Nitrate as N			5.00	5.07		mg/L		101	90 - 110	0	15

Lab Sample ID: 570-124485-D-3 MS
Matrix: Water
Analysis Batch: 296621

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrite as N	ND		2.50	3.04	LM	mg/L		121	80 - 120		
Nitrate as N	0.033	J,DX	5.00	4.91		mg/L		98	80 - 120		

Lab Sample ID: 570-124485-D-3 MSD
Matrix: Water
Analysis Batch: 296621

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	ND		2.50	2.93		mg/L		117	80 - 120	4	20
Nitrate as N	0.033	J,DX	5.00	4.94		mg/L		98	80 - 120	1	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-297043/7
Matrix: Water
Analysis Batch: 297043

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/20/23 02:12	1

Lab Sample ID: LCS 570-297043/8
Matrix: Water
Analysis Batch: 297043

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	23.0		ug/L		92	85 - 115		

Lab Sample ID: LCSD 570-297043/9
Matrix: Water
Analysis Batch: 297043

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	23.5		ug/L		94	85 - 115	2	15

Lab Sample ID: 570-124466-C-9 MS
Matrix: Water
Analysis Batch: 297043

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	100	EY	50.0	153	EY	ug/L		101	80 - 120		

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: 570-124466-C-9 MSD
Matrix: Water
Analysis Batch: 297043

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	100	EY	50.0	144	EY	ug/L		84	80 - 120	6	15

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-297278/1-A
Matrix: Water
Analysis Batch: 297371

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 297278

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/20/23 06:26	01/20/23 10:03	1
Copper	ND		2.0	0.32	ug/L		01/20/23 06:26	01/20/23 10:03	1
Lead	ND		1.0	0.12	ug/L		01/20/23 06:26	01/20/23 10:03	1
Selenium	ND		2.0	0.52	ug/L		01/20/23 06:26	01/20/23 10:03	1
Iron	6.36	J,DX	20	3.7	ug/L		01/20/23 06:26	01/20/23 10:03	1
Arsenic	ND		1.0	0.16	ug/L		01/20/23 06:26	01/20/23 10:03	1
Zinc	ND		20	2.8	ug/L		01/20/23 06:26	01/20/23 10:03	1
Manganese	ND		1.0	0.41	ug/L		01/20/23 06:26	01/20/23 10:03	1

Lab Sample ID: LCS 570-297278/2-A
Matrix: Water
Analysis Batch: 297371

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 297278

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	81.5		ug/L		102	85 - 115
Copper	80.0	84.2		ug/L		105	85 - 115
Lead	80.0	80.5		ug/L		101	85 - 115
Selenium	80.0	82.1		ug/L		103	85 - 115
Iron	800	839		ug/L		105	85 - 115
Arsenic	80.0	81.9		ug/L		102	85 - 115
Zinc	80.0	82.3		ug/L		103	85 - 115
Manganese	80.0	83.5		ug/L		104	85 - 115

Lab Sample ID: LCSD 570-297278/3-A
Matrix: Water
Analysis Batch: 297371

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 297278

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	81.5		ug/L		102	85 - 115	0	20
Copper	80.0	82.6		ug/L		103	85 - 115	2	20
Lead	80.0	81.5		ug/L		102	85 - 115	1	20
Selenium	80.0	81.9		ug/L		102	85 - 115	0	20
Iron	800	826		ug/L		103	85 - 115	2	20
Arsenic	80.0	81.3		ug/L		102	85 - 115	1	20
Zinc	80.0	82.9		ug/L		104	85 - 115	1	20
Manganese	80.0	82.4		ug/L		103	85 - 115	1	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-124392-1 MS
Matrix: Water
Analysis Batch: 297371

Client Sample ID: Outfall011_20230117_Comp
Prep Type: Total Recoverable
Prep Batch: 297278

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND		80.0	82.4		ug/L		103	80 - 120
Copper	4.9		80.0	89.7		ug/L		106	80 - 120
Lead	0.85	J,DX	80.0	81.9		ug/L		101	80 - 120
Selenium	ND		80.0	79.3		ug/L		99	80 - 120
Iron	780	MB	800	1650		ug/L		108	80 - 120
Arsenic	1.8		80.0	82.5		ug/L		101	80 - 120
Zinc	7.1	J,DX	80.0	90.3		ug/L		104	80 - 120
Manganese	19		80.0	103		ug/L		106	80 - 120

Lab Sample ID: 570-124392-1 MSD
Matrix: Water
Analysis Batch: 297371

Client Sample ID: Outfall011_20230117_Comp
Prep Type: Total Recoverable
Prep Batch: 297278

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND		80.0	81.5		ug/L		102	80 - 120	1	20
Copper	4.9		80.0	88.8		ug/L		105	80 - 120	1	20
Lead	0.85	J,DX	80.0	81.4		ug/L		101	80 - 120	1	20
Selenium	ND		80.0	79.9		ug/L		100	80 - 120	1	20
Iron	780	MB	800	1710		ug/L		116	80 - 120	3	20
Arsenic	1.8		80.0	83.4		ug/L		102	80 - 120	1	20
Zinc	7.1	J,DX	80.0	89.6		ug/L		103	80 - 120	1	20
Manganese	19		80.0	102		ug/L		104	80 - 120	1	20

Lab Sample ID: MB 570-296798/1-A
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L			01/19/23 10:31	1
Copper	ND		2.0	0.32	ug/L			01/19/23 10:31	1
Lead	0.167	J,DX	1.0	0.12	ug/L			01/19/23 10:31	1
Selenium	ND		2.0	0.52	ug/L			01/19/23 10:31	1
Iron	ND		20	3.7	ug/L			01/19/23 10:31	1
Arsenic	ND		1.0	0.16	ug/L			01/19/23 10:31	1
Zinc	ND		20	2.8	ug/L			01/19/23 10:31	1
Manganese	ND		1.0	0.41	ug/L			01/19/23 10:31	1

Lab Sample ID: LCS 570-296798/2-A
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	74.3		ug/L		93	85 - 115
Copper	80.0	74.4		ug/L		93	85 - 115
Lead	80.0	74.0		ug/L		93	85 - 115
Selenium	80.0	72.8		ug/L		91	85 - 115
Iron	800	767		ug/L		96	85 - 115
Arsenic	80.0	74.4		ug/L		93	85 - 115
Zinc	80.0	74.2		ug/L		93	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-296798/2-A
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Manganese			80.0	75.0		ug/L		94	85 - 115		

Lab Sample ID: LCSD 570-296798/3-A
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium			80.0	74.2		ug/L		93	85 - 115	0	20
Copper			80.0	74.8		ug/L		93	85 - 115	0	20
Lead			80.0	76.2		ug/L		95	85 - 115	3	20
Selenium			80.0	73.5		ug/L		92	85 - 115	1	20
Iron			800	772		ug/L		97	85 - 115	1	20
Arsenic			80.0	74.3		ug/L		93	85 - 115	0	20
Zinc			80.0	74.3		ug/L		93	85 - 115	0	20
Manganese			80.0	75.5		ug/L		94	85 - 115	1	20

Lab Sample ID: 570-124392-3 MS
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Outfall011_20230117_Comp_F
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Cadmium	ND	BU	80.0	74.9		ug/L		94	80 - 120		
Copper	4.8	BU	80.0	79.6		ug/L		93	80 - 120		
Lead	0.22	J,DX BU MB	80.0	74.4		ug/L		93	80 - 120		
Selenium	ND	BU	80.0	75.3		ug/L		94	80 - 120		
Iron	110	BU	800	851		ug/L		93	80 - 120		
Arsenic	1.3	BU	80.0	77.1		ug/L		95	80 - 120		
Zinc	3.9	J,DX BU	80.0	76.7		ug/L		91	80 - 120		
Manganese	5.1	BU	80.0	81.8		ug/L		96	80 - 120		

Lab Sample ID: 570-124392-3 MSD
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Outfall011_20230117_Comp_F
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND	BU	80.0	74.0		ug/L		92	80 - 120	1	20
Copper	4.8	BU	80.0	78.9		ug/L		93	80 - 120	1	20
Lead	0.22	J,DX BU MB	80.0	74.4		ug/L		93	80 - 120	0	20
Selenium	ND	BU	80.0	76.4		ug/L		95	80 - 120	1	20
Iron	110	BU	800	848		ug/L		93	80 - 120	0	20
Arsenic	1.3	BU	80.0	76.6		ug/L		94	80 - 120	1	20
Zinc	3.9	J,DX BU	80.0	77.1		ug/L		91	80 - 120	1	20
Manganese	5.1	BU	80.0	79.4		ug/L		93	80 - 120	3	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-297181/1-A
Matrix: Water
Analysis Batch: 297484

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 297181

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		01/19/23 16:54	01/20/23 13:49	1

Lab Sample ID: LCS 570-297181/2-A
Matrix: Water
Analysis Batch: 297484

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 297181

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	7.74		ug/L		97	85 - 115

Lab Sample ID: LCSD 570-297181/3-A
Matrix: Water
Analysis Batch: 297484

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 297181

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	8.00	7.93		ug/L		99	85 - 115	2	10

Lab Sample ID: 570-124392-1 MS
Matrix: Water
Analysis Batch: 297484

Client Sample ID: Outfall011_20230117_Comp
Prep Type: Total/NA
Prep Batch: 297181

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		8.00	7.91		ug/L		99	85 - 115

Lab Sample ID: 570-124392-1 MSD
Matrix: Water
Analysis Batch: 297484

Client Sample ID: Outfall011_20230117_Comp
Prep Type: Total/NA
Prep Batch: 297181

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		8.00	7.86		ug/L		98	85 - 115	1	10

Lab Sample ID: MB 570-297184/1-B
Matrix: Water
Analysis Batch: 297484

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 297186

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		01/19/23 17:19	01/20/23 14:36	1

Lab Sample ID: LCS 570-297184/2-B
Matrix: Water
Analysis Batch: 297484

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 297186

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	7.81		ug/L		98	85 - 115

Lab Sample ID: LCSD 570-297184/3-B
Matrix: Water
Analysis Batch: 297484

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 297186

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	8.00	7.62		ug/L		95	85 - 115	3	10

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: 570-124226-A-4-F MS
Matrix: Water
Analysis Batch: 297484

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 297186

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		8.00	7.68		ug/L		96	85 - 115

Lab Sample ID: 570-124226-A-4-G MSD
Matrix: Water
Analysis Batch: 297484

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 297186

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		8.00	7.69		ug/L		96	85 - 115	0	10

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-298842/5-A
Matrix: Water
Analysis Batch: 298901

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 298842

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		01/26/23 09:45	01/26/23 12:10	1

Lab Sample ID: LCS 570-298842/6-A
Matrix: Water
Analysis Batch: 298901

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 298842

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	0.500	0.517		mg/L		103	90 - 110

Lab Sample ID: LCSD 570-298842/7-A
Matrix: Water
Analysis Batch: 298901

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 298842

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	0.500	0.515		mg/L		103	90 - 110	0	20

Lab Sample ID: 570-124603-U-1-A MS
Matrix: Water
Analysis Batch: 298901

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 298842

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	ND		0.500	0.539		mg/L		108	90 - 110

Lab Sample ID: 570-124603-U-1-B MSD
Matrix: Water
Analysis Batch: 298901

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 298842

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	ND		0.500	0.506		mg/L		101	90 - 110	6	25

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-297946/11
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			01/23/23 13:11	1

Lab Sample ID: LCS 570-297946/14
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	267		ug/L		107	90 - 110

Lab Sample ID: LCSD 570-297946/13
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	250	248		ug/L		99	90 - 110	7	20

Lab Sample ID: MRL 570-297946/10
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	4.66	J,DX	ug/L		93	50 - 150

Lab Sample ID: 570-124243-S-1 MS
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	ND		250	216		ug/L		86	70 - 130

Lab Sample ID: 570-124243-S-1 MSD
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	ND		250	227		ug/L		91	70 - 130	5	30

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-296496/1
Matrix: Water
Analysis Batch: 296496

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	1000	1000		NTU		101.0	99.0 - 101.0

Method: SM 2130B - Turbidity (Continued)

Lab Sample ID: LCSSRM 570-296496/2
Matrix: Water
Analysis Batch: 296496

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	10.0	10		NTU		101.0	99.0 - 101.0

Lab Sample ID: LCSSRM 570-296496/3
Matrix: Water
Analysis Batch: 296496

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Lab Sample ID: 570-124333-B-1 DU
Matrix: Water
Analysis Batch: 296496

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Turbidity	3.2		3.2		NTU		0.6	25

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-297523/1
Matrix: Water
Analysis Batch: 297523

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			01/20/23 17:14	1

Lab Sample ID: LCS 570-297523/2
Matrix: Water
Analysis Batch: 297523

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	1040		mg/L		104	84 - 108

Lab Sample ID: LCSD 570-297523/3
Matrix: Water
Analysis Batch: 297523

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1020		mg/L		102	84 - 108	2	10

Lab Sample ID: 570-124298-D-10 DU
Matrix: Water
Analysis Batch: 297523

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	3800		3840		mg/L		0.1	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-297433/1
Matrix: Water
Analysis Batch: 297433

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/20/23 13:11	1

Lab Sample ID: LCS 570-297433/2
Matrix: Water
Analysis Batch: 297433

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	98.0		mg/L		98	77 - 116

Lab Sample ID: LCSD 570-297433/3
Matrix: Water
Analysis Batch: 297433

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	98.0		mg/L		98	77 - 116	0	10

Lab Sample ID: 570-124565-B-1 DU
Matrix: Water
Analysis Batch: 297433

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	60		60.7		mg/L		0.6	10

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-296915/5-A
Matrix: Water
Analysis Batch: 296893

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296915

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.30	0.054	mg/L		01/18/23 16:35	01/18/23 17:59	1

Lab Sample ID: LCS 570-296915/6-A
Matrix: Water
Analysis Batch: 296893

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296915

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
MBAS	1.00	1.03		mg/L		103	85 - 111

Lab Sample ID: LCSD 570-296915/7-A
Matrix: Water
Analysis Batch: 296893

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296915

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS	1.00	1.08		mg/L		108	85 - 111	5	7

Method: SM 5540C - Methylene Blue Active Substances (MBAS) (Continued)

Lab Sample ID: 570-124392-1 MS — **Client Sample ID: Outfall011_20230117_Comp**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 296893 — **Prep Batch: 296915**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
MBAS	0.14	J,DX	1.00	1.18		mg/L		105	75 - 125		

Lab Sample ID: 570-124392-1 MSD — **Client Sample ID: Outfall011_20230117_Comp**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 296893 — **Prep Batch: 296915**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS	0.14	J,DX	1.00	1.13		mg/L		99	75 - 125	5	12

Method: SM5210B - BOD, 5 Day

Lab Sample ID: USB 570-297921/2 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 297921

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L			01/18/23 10:40	1

Lab Sample ID: LCS 570-297921/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 297921

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Biochemical Oxygen Demand			199	206		mg/L		104	84.6 - 115.4		

Lab Sample ID: 570-124511-E-2 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 297921

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Biochemical Oxygen Demand	2.4			2.37		mg/L				0.8	25

GC/MS Semi VOA

Prep Batch: 296958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	625	
MB 570-296958/1-A	Method Blank	Total/NA	Water	625	
LCS 570-296958/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-296958/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 299507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	625.1 SIM	296958
MB 570-296958/1-A	Method Blank	Total/NA	Water	625.1 SIM	296958
LCS 570-296958/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	296958
LCSD 570-296958/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	296958

GC Semi VOA

Prep Batch: 296981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	608	
MB 570-296981/1-A	Method Blank	Total/NA	Water	608	
LCS 570-296981/2-A	Lab Control Sample	Total/NA	Water	608	
LCSD 570-296981/3-A	Lab Control Sample Dup	Total/NA	Water	608	

Analysis Batch: 297380

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	608.3	296981
MB 570-296981/1-A	Method Blank	Total/NA	Water	608.3	296981
LCS 570-296981/2-A	Lab Control Sample	Total/NA	Water	608.3	296981
LCSD 570-296981/3-A	Lab Control Sample Dup	Total/NA	Water	608.3	296981

HPLC/IC

Analysis Batch: 296620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	300.0	
MB 570-296620/5	Method Blank	Total/NA	Water	300.0	
LCS 570-296620/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-296620/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-124485-D-3 MS	Matrix Spike	Total/NA	Water	300.0	
570-124485-D-3 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 296621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	300.0	
MB 570-296621/5	Method Blank	Total/NA	Water	300.0	
LCS 570-296621/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-296621/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-124485-D-3 MS	Matrix Spike	Total/NA	Water	300.0	
570-124485-D-3 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 297043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	314.0	
MB 570-297043/7	Method Blank	Total/NA	Water	314.0	

HPLC/IC (Continued)

Analysis Batch: 297043 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-297043/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-297043/9	Lab Control Sample Dup	Total/NA	Water	314.0	
570-124466-C-9 MS	Matrix Spike	Total/NA	Water	314.0	
570-124466-C-9 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 298163

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	NO2NO3 Calc	

Metals

Filtration Batch: 296798

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-3	Outfall011_20230117_Comp_F	Dissolved	Water	Filtration	
MB 570-296798/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-296798/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-296798/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-124392-3 MS	Outfall011_20230117_Comp_F	Dissolved	Water	Filtration	
570-124392-3 MSD	Outfall011_20230117_Comp_F	Dissolved	Water	Filtration	

Analysis Batch: 297048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-3	Outfall011_20230117_Comp_F	Dissolved	Water	200.8	296798
MB 570-296798/1-A	Method Blank	Dissolved	Water	200.8	296798
LCS 570-296798/2-A	Lab Control Sample	Dissolved	Water	200.8	296798
LCSD 570-296798/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	296798
570-124392-3 MS	Outfall011_20230117_Comp_F	Dissolved	Water	200.8	296798
570-124392-3 MSD	Outfall011_20230117_Comp_F	Dissolved	Water	200.8	296798

Prep Batch: 297181

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	245.1	
MB 570-297181/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-297181/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-297181/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
570-124392-1 MS	Outfall011_20230117_Comp	Total/NA	Water	245.1	
570-124392-1 MSD	Outfall011_20230117_Comp	Total/NA	Water	245.1	

Filtration Batch: 297184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-3	Outfall011_20230117_Comp_F	Dissolved	Water	Filtration	
MB 570-297184/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-297184/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-297184/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-124226-A-4-F MS	Matrix Spike	Dissolved	Water	Filtration	
570-124226-A-4-G MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Prep Batch: 297186

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-3	Outfall011_20230117_Comp_F	Dissolved	Water	245.1	297184
MB 570-297184/1-B	Method Blank	Dissolved	Water	245.1	297184

Metals (Continued)

Prep Batch: 297186 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-297184/2-B	Lab Control Sample	Dissolved	Water	245.1	297184
LCSD 570-297184/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	297184
570-124226-A-4-F MS	Matrix Spike	Dissolved	Water	245.1	297184
570-124226-A-4-G MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	297184

Prep Batch: 297278

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total Recoverable	Water	200.8	
MB 570-297278/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-297278/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-297278/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-124392-1 MS	Outfall011_20230117_Comp	Total Recoverable	Water	200.8	
570-124392-1 MSD	Outfall011_20230117_Comp	Total Recoverable	Water	200.8	

Analysis Batch: 297371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total Recoverable	Water	200.8	297278
MB 570-297278/1-A	Method Blank	Total Recoverable	Water	200.8	297278
LCS 570-297278/2-A	Lab Control Sample	Total Recoverable	Water	200.8	297278
LCSD 570-297278/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	297278
570-124392-1 MS	Outfall011_20230117_Comp	Total Recoverable	Water	200.8	297278
570-124392-1 MSD	Outfall011_20230117_Comp	Total Recoverable	Water	200.8	297278

Analysis Batch: 297484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	245.1	297181
570-124392-3	Outfall011_20230117_Comp_F	Dissolved	Water	245.1	297186
MB 570-297181/1-A	Method Blank	Total/NA	Water	245.1	297181
MB 570-297184/1-B	Method Blank	Dissolved	Water	245.1	297186
LCS 570-297181/2-A	Lab Control Sample	Total/NA	Water	245.1	297181
LCS 570-297184/2-B	Lab Control Sample	Dissolved	Water	245.1	297186
LCSD 570-297181/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	297181
LCSD 570-297184/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	297186
570-124226-A-4-F MS	Matrix Spike	Dissolved	Water	245.1	297186
570-124226-A-4-G MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	297186
570-124392-1 MS	Outfall011_20230117_Comp	Total/NA	Water	245.1	297181
570-124392-1 MSD	Outfall011_20230117_Comp	Total/NA	Water	245.1	297181

General Chemistry

Analysis Batch: 296496

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	SM 2130B	
LCSSRM 570-296496/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-296496/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-296496/3	Lab Control Sample	Total/NA	Water	SM 2130B	
570-124333-B-1 DU	Duplicate	Total/NA	Water	SM 2130B	

Analysis Batch: 296893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	SM 5540C	296915

General Chemistry (Continued)

Analysis Batch: 296893 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-296915/5-A	Method Blank	Total/NA	Water	SM 5540C	296915
LCS 570-296915/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	296915
LCSD 570-296915/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	296915
570-124392-1 MS	Outfall011_20230117_Comp	Total/NA	Water	SM 5540C	296915
570-124392-1 MSD	Outfall011_20230117_Comp	Total/NA	Water	SM 5540C	296915

Prep Batch: 296915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	SM 5540C	
MB 570-296915/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-296915/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-296915/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	
570-124392-1 MS	Outfall011_20230117_Comp	Total/NA	Water	SM 5540C	
570-124392-1 MSD	Outfall011_20230117_Comp	Total/NA	Water	SM 5540C	

Analysis Batch: 297433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	SM 2540D	
MB 570-297433/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-297433/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-297433/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-124565-B-1 DU	Duplicate	Total/NA	Water	SM 2540D	

Analysis Batch: 297523

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	SM 2540C	
MB 570-297523/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-297523/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-297523/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
570-124298-D-10 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 297921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	SM5210B	
USB 570-297921/2	Method Blank	Total/NA	Water	SM5210B	
LCS 570-297921/4	Lab Control Sample	Total/NA	Water	SM5210B	
570-124511-E-2 DU	Duplicate	Total/NA	Water	SM5210B	

Analysis Batch: 297946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	Kelada 01	
MB 570-297946/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-297946/14	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-297946/13	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-297946/10	Lab Control Sample	Total/NA	Water	Kelada 01	
570-124243-S-1 MS	Matrix Spike	Total/NA	Water	Kelada 01	
570-124243-S-1 MSD	Matrix Spike Duplicate	Total/NA	Water	Kelada 01	

Prep Batch: 298842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	Distill/Ammonia	

General Chemistry (Continued)

Prep Batch: 298842 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-298842/5-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-298842/6-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-298842/7-A	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	
570-124603-U-1-A MS	Matrix Spike	Total/NA	Water	Distill/Ammonia	
570-124603-U-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 298901

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	350.1	298842
MB 570-298842/5-A	Method Blank	Total/NA	Water	350.1	298842
LCS 570-298842/6-A	Lab Control Sample	Total/NA	Water	350.1	298842
LCSD 570-298842/7-A	Lab Control Sample Dup	Total/NA	Water	350.1	298842
570-124603-U-1-A MS	Matrix Spike	Total/NA	Water	350.1	298842
570-124603-U-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	298842

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Client Sample ID: Outfall011_20230117_Comp
Lab Sample ID: 570-124392-1
Date Collected: 01/17/23 08:00
Matrix: Water
Date Received: 01/17/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			1042.5 mL	2 mL	296958	01/19/23 05:37	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	299507	01/30/23 17:29	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Prep	608			1500 mL	1 mL	296981	01/19/23 08:08	OAJ3	EET CAL 4
Total/NA	Analysis	608.3		1	1 mL	1 mL	297380	01/20/23 17:08	N5Y3	EET CAL 4
	Instrument ID: GC52A									
Total/NA	Analysis	300.0		1	4 mL	4 mL	296620	01/18/23 08:34	UIP1	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	300.0		1	4 mL	4 mL	296621	01/18/23 08:34	UIP1	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	314.0		1	4 mL	4 mL	297043	01/20/23 05:01	M5Z3	EET CAL 4
	Instrument ID: IC13									
Total/NA	Analysis	NO2NO3 Calc		1			298163	01/24/23 12:20	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total Recoverable	Prep	200.8			50 mL	50 mL	297278	01/20/23 06:26	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			297371	01/20/23 10:09	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Prep	245.1			25 mL	50 mL	297181	01/19/23 16:54	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			297484	01/20/23 13:54	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	298842	01/26/23 09:45	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	298901	01/26/23 12:26	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	297946	01/23/23 14:17	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			296496	01/17/23 22:17	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	297523	01/20/23 17:14	ZL7L	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	297433	01/20/23 13:11	UWCT	EET CAL 4
	Instrument ID: BAL62									
Total/NA	Prep	SM 5540C			100 mL	100 mL	296915	01/18/23 16:35	TXA8	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	296893	01/18/23 18:04	TXA8	EET CAL 4
	Instrument ID: UV9									
Total/NA	Analysis	SM5210B		1			297921	01/18/23 17:17	W0EF	EET CAL 4
	Instrument ID: BOD3									

Client Sample ID: Outfall011_20230117_Comp_F
Lab Sample ID: 570-124392-3
Date Collected: 01/17/23 08:00
Matrix: Water
Date Received: 01/17/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	296798	01/18/23 13:28	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			297048	01/19/23 10:38	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Client Sample ID: Outfall011_20230117_Comp_F
Lab Sample ID: 570-124392-3
Date Collected: 01/17/23 08:00
Matrix: Water
Date Received: 01/17/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			25 mL	25 mL	297184	01/19/23 16:57	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	297186	01/19/23 17:19	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			297484	01/20/23 14:53	C0YH	EET CAL 4
	Instrument ID: HG8									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Method	Method Description	Protocol	Laboratory
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
608.3	Organochlorine Pesticides in Water	40CFR136A	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
SM5210B	BOD, 5 Day	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
608	Liquid-Liquid Extraction (Separatory Funnel)	40CFR136A	EET CAL 4
625	Liquid-Liquid Extraction	40CFR136A	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Job ID: 570-124392-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124392-1	Outfall011_20230117_Comp	Water	01/17/23 08:00	01/17/23 18:25
570-124392-3	Outfall011_20230117_Comp_F	Water	01/17/23 08:00	01/17/23 18:25

124392

Eurofins Calscience Irvine

570-124392 Chain of Custody

CHAIN OF CUSTODY FORM

Client Name/Address. Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002 011, 018] Outfall 011 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Project Manager:** Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	**Field Manager:** Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED														
									R	R	R	R	R	R	R	R	R	R	R	C			
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals. (E200.7) Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl- SO_4, Nitrate-N, Nitrite-N NO3+NO2-N Perchlorate (E300)	Turbidity TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals. Mercury (E245.1)	Total Recoverable Metals. (E200.7) As, Mn, Fe			Comments
Outfall 011	Outfall011_20230117_Comp	1/17/2023 0800	WM	500 mL Poly	1	HNO_3	90	No	X										X	X			Outfall 011 analyze for As, Mn and Fe.
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	1L Poly	1	None	115	No			X												
			WM	500 mL Poly	2	None	120	No				X											
			WM	500 mL Poly	2	None	130	No					X										48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X									48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X							
			WM	1 L Glass Amber	2	None	170	No									X						
			WM	1 L Glass Amber	2	None	180	No										X					
			WM	1L Poly	1	None	185	No							X								
	Outfall011_20230117_Comp_Extra	1/17/2023 0800	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	500 mL Poly	2	None	120	No				H											Hold
			WM	500 mL Poly	2	None	130	No					H										Hold
			WM	1 L Glass Amber	2	None	170	No									H						Hold
			WM	1 L Glass Amber	2	None	180	No										H					Hold

Legend C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-17-2023/1245	H;A	[signature]	1/17/23 1245 EC
[signature]	1/17/23 1825	EC	[signature]	1/17/23 1825

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal. _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: ___X___

1.9/19 1.7/17 SCH

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2/16/2023

2019-2020 Rainy Season
Version 4

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Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address. Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R: Total Dissolved Metals. (E200.7) Zn (E200.8). Cu, Pb, Cd, Se	R: Cyanide (SM4500-CN-E / E335.2)	R: Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0) Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R: Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA	R: Total Dissolved Metals. Mercury (E245.1)	C: Total Dissolved Metals (E200.7) As, Mn, Fe	Comments
Outfall 011	Outfall011_20230117_Comp_F	1/17/2023 0830	WM	1L Poly	1	None	200	No	X					X	Filter and preserve w/in 24hrs of receipt at lab. Outfall 011 analyze for As, Mn and Fe.
			WM	borosilicate vials	1	None	320	No					X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall011_20230117_Comp	1/17/2023 0830	WM	500 mL Poly	1	NaOH	220	No		X					
			WM	2.5 Gal Cube	1	None	225	No			X				Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No							
			WM	1 Gal Cube	6	None	235	No				X			Only test if first or second rain events of the year Deliver to ABC Labs in Ventura, CA

Legend. A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-17-2023/1245	H.A	[signature]	1/17/23 1245 EC
[signature]	1/17/23 1825	EC	[signature]	1/17/23 1825

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements. (Check)
No Level IV: _____ All Level IV: __X__

VM 1/17 ~~2.3/2.3~~ 16/1.6 SCH

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2/16/2023

2019-2020 Rainy Season
Version 4

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124392-1

Login Number: 124392
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/14/2023 6:19:10 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 011 - Comp

JOB NUMBER

570-124392-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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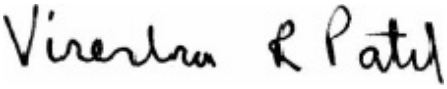

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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-124392-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124392-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124392-2

Comments
No additional comments.

Receipt
The samples were received on 1/17/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 1.9º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: Outfall011_20230117_Comp (570-124392-1) and (CCV 320-652595/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Job ID: 570-124392-2

Client Sample ID: Outfall011_20230117_Comp

Lab Sample ID: 570-124392-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.0000013	J,DX q	0.000048	0.00000040	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.0000011	J,DX q MB	0.000048	0.00000019	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.0000012	J,DX	0.000048	0.00000022	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000035	J,DX MB	0.000048	0.00000028	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000017	J,DX q MB	0.000048	0.00000027	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000022	J,DX MB	0.000048	0.00000024	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000016	J,DX q MB	0.000048	0.00000025	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000015	J,DX q MB	0.000048	0.00000024	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000014	J,DX q MB	0.000048	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000024	J,DX MB	0.000048	0.0000012	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000011	J,DX MB	0.000048	0.00000036	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000020	J,DX MB	0.000048	0.00000040	ug/L	1		1613B	Total/NA
OCDD	0.00017	MB	0.000095	0.0000012	ug/L	1		1613B	Total/NA
OCDF	0.000019	J,DX MB	0.000095	0.00000038	ug/L	1		1613B	Total/NA
Total TCDD	0.0000018	J,DX	0.0000095	0.00000062	ug/L	1		1613B	Total/NA
Total TCDF	0.00000065	J,DX	0.0000095	0.00000025	ug/L	1		1613B	Total/NA
Total PeCDD	0.0000013	J,DX q	0.000048	0.00000040	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000023	J,DX q MB	0.000048	0.00000019	ug/L	1		1613B	Total/NA
Total HxCDD	0.000011	J,DX q MB	0.000048	0.00000024	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000092	J,DX q MB	0.000048	0.00000021	ug/L	1		1613B	Total/NA
Total HpCDD	0.000049	J,DX MB	0.000048	0.0000012	ug/L	1		1613B	Total/NA
Total HpCDF	0.000021	J,DX MB	0.000048	0.00000036	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: Outfall011_20230117_Comp
Lab Sample ID: 570-124392-1
Date Collected: 01/17/23 08:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000095	0.00000062	ug/L		02/03/23 10:06	02/07/23 16:59	1
1,2,3,7,8-PeCDD	**0.0000013**	**J,DX q**	0.000048	0.00000040	ug/L		02/03/23 10:06	02/07/23 16:59	1
1,2,3,7,8-PeCDF	**0.0000011**	**J,DX q MB**	0.000048	0.00000019	ug/L		02/03/23 10:06	02/07/23 16:59	1
2,3,4,7,8-PeCDF	**0.0000012**	**J,DX**	0.000048	0.00000022	ug/L		02/03/23 10:06	02/07/23 16:59	1
1,2,3,4,7,8-HxCDD	**0.0000035**	**J,DX MB**	0.000048	0.00000028	ug/L		02/03/23 10:06	02/07/23 16:59	1
1,2,3,6,7,8-HxCDD	**0.0000017**	**J,DX q MB**	0.000048	0.00000027	ug/L		02/03/23 10:06	02/07/23 16:59	1
1,2,3,7,8,9-HxCDD	**0.0000022**	**J,DX MB**	0.000048	0.00000024	ug/L		02/03/23 10:06	02/07/23 16:59	1
1,2,3,4,7,8-HxCDF	**0.0000016**	**J,DX q MB**	0.000048	0.00000025	ug/L		02/03/23 10:06	02/07/23 16:59	1
1,2,3,6,7,8-HxCDF	ND		0.000048	0.00000023	ug/L		02/03/23 10:06	02/07/23 16:59	1
1,2,3,7,8,9-HxCDF	**0.0000015**	**J,DX q MB**	0.000048	0.00000024	ug/L		02/03/23 10:06	02/07/23 16:59	1
2,3,4,6,7,8-HxCDF	**0.0000014**	**J,DX q MB**	0.000048	0.00000021	ug/L		02/03/23 10:06	02/07/23 16:59	1
1,2,3,4,6,7,8-HpCDD	**0.000024**	**J,DX MB**	0.000048	0.0000012	ug/L		02/03/23 10:06	02/07/23 16:59	1
1,2,3,4,6,7,8-HpCDF	**0.000011**	**J,DX MB**	0.000048	0.00000036	ug/L		02/03/23 10:06	02/07/23 16:59	1
1,2,3,4,7,8,9-HpCDF	**0.0000020**	**J,DX MB**	0.000048	0.00000040	ug/L		02/03/23 10:06	02/07/23 16:59	1
OCDD	**0.00017**	**MB**	0.000095	0.0000012	ug/L		02/03/23 10:06	02/07/23 16:59	1
OCDF	**0.000019**	**J,DX MB**	0.000095	0.00000038	ug/L		02/03/23 10:06	02/07/23 16:59	1
Total TCDD	**0.0000018**	**J,DX**	0.0000095	0.00000062	ug/L		02/03/23 10:06	02/07/23 16:59	1
Total TCDF	**0.00000065**	**J,DX**	0.0000095	0.00000025	ug/L		02/03/23 10:06	02/07/23 16:59	1
Total PeCDD	**0.0000013**	**J,DX q**	0.000048	0.00000040	ug/L		02/03/23 10:06	02/07/23 16:59	1
Total PeCDF	**0.0000023**	**J,DX q MB**	0.000048	0.00000019	ug/L		02/03/23 10:06	02/07/23 16:59	1
Total HxCDD	**0.000011**	**J,DX q MB**	0.000048	0.00000024	ug/L		02/03/23 10:06	02/07/23 16:59	1
Total HxCDF	**0.0000092**	**J,DX q MB**	0.000048	0.00000021	ug/L		02/03/23 10:06	02/07/23 16:59	1
Total HpCDD	**0.000049**	**J,DX MB**	0.000048	0.0000012	ug/L		02/03/23 10:06	02/07/23 16:59	1
Total HpCDF	**0.000021**	**J,DX MB**	0.000048	0.00000036	ug/L		02/03/23 10:06	02/07/23 16:59	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*73*		*25 - 164*	*02/03/23 10:06*	*02/07/23 16:59*	*1*
13C-2,3,7,8-TCDF	*72*		*24 - 169*	*02/03/23 10:06*	*02/07/23 16:59*	*1*
13C-1,2,3,7,8-PeCDD	*76*		*25 - 181*	*02/03/23 10:06*	*02/07/23 16:59*	*1*
13C-1,2,3,7,8-PeCDF	*76*		*24 - 185*	*02/03/23 10:06*	*02/07/23 16:59*	*1*
13C-2,3,4,7,8-PeCDF	*74*		*21 - 178*	*02/03/23 10:06*	*02/07/23 16:59*	*1*
13C-1,2,3,4,7,8-HxCDD	*74*		*32 - 141*	*02/03/23 10:06*	*02/07/23 16:59*	*1*
13C-1,2,3,6,7,8-HxCDD	*79*		*28 - 130*	*02/03/23 10:06*	*02/07/23 16:59*	*1*
13C-1,2,3,4,7,8-HxCDF	*68*		*26 - 152*	*02/03/23 10:06*	*02/07/23 16:59*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: Outfall011_20230117_Comp **Lab Sample ID: 570-124392-1**
Date Collected: 01/17/23 08:00 **Matrix: Water**
Date Received: 01/17/23 18:25

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,6,7,8-HxCDF	79		26 - 123	02/03/23 10:06	02/07/23 16:59	1
13C-1,2,3,7,8,9-HxCDF	82		29 - 147	02/03/23 10:06	02/07/23 16:59	1
13C-2,3,4,6,7,8-HxCDF	83		28 - 136	02/03/23 10:06	02/07/23 16:59	1
13C-1,2,3,4,6,7,8-HpCDD	75		23 - 140	02/03/23 10:06	02/07/23 16:59	1
13C-1,2,3,4,6,7,8-HpCDF	71		28 - 143	02/03/23 10:06	02/07/23 16:59	1
13C-1,2,3,4,7,8,9-HpCDF	76		26 - 138	02/03/23 10:06	02/07/23 16:59	1
13C-OCDD	75		17 - 157	02/03/23 10:06	02/07/23 16:59	1
13C-OCDF	74		17 - 157	02/03/23 10:06	02/07/23 16:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	89		35 - 197	02/03/23 10:06	02/07/23 16:59	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: Outfall011_20230117_Comp
Lab Sample ID: 570-124392-1
Date Collected: 01/17/23 08:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.0000095	0.00000031	ug/L		02/03/23 10:06	02/08/23 19:19	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*67*		*24 - 169*	*02/03/23 10:06*	*02/08/23 19:19*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*104*		*35 - 197*	*02/03/23 10:06*	*02/08/23 19:19*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-124392-1	Outfall011_20230117_Comp	89
570-124392-1 - RA	Outfall011_20230117_Comp	104
MB 320-651610/1-A	Method Blank	91

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-651610/2-A	Lab Control Sample	89
LCSD 320-651610/3-A	Lab Control Sample Dup	91

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Job ID: 570-124392-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-124392-1	Outfall011_20230117_Comp	73	72	76	76	74	74	79	68
570-124392-1 - RA	Outfall011_20230117_Comp		67						
MB 320-651610/1-A	Method Blank	71	69	72	72	65	65	69	58

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-124392-1	Outfall011_20230117_Comp	79	82	83	75	71	76	75	74
570-124392-1 - RA	Outfall011_20230117_Comp								
MB 320-651610/1-A	Method Blank	70	78	78	71	64	72	71	70

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-651610/2-A	Lab Control Sample	67	66	70	69	68	67	72	62
LCSD 320-651610/3-A	Lab Control Sample Dup	71	69	74	73	69	65	74	62

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-651610/2-A	Lab Control Sample	71	75	74	69	66	70	71	70
LCSD 320-651610/3-A	Lab Control Sample Dup	73	78	78	73	67	74	76	74

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-651610/1-A
Matrix: Water
Analysis Batch: 652417

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651610

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.0000011	ug/L		02/03/23 10:06	02/07/23 14:39	1
2,3,7,8-TCDF	ND		0.000010	0.00000026	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000047	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,7,8-PeCDF	0.000000524	J,DX	0.000050	0.00000024	ug/L		02/03/23 10:06	02/07/23 14:39	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000029	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,4,7,8-HxCDD	0.00000235	J,DX	0.000050	0.00000035	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,6,7,8-HxCDD	0.000000472	J,DX	0.000050	0.00000034	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,7,8,9-HxCDD	0.000000555	J,DX q	0.000050	0.00000031	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,4,7,8-HxCDF	0.000000363	J,DX q	0.000050	0.00000022	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,6,7,8-HxCDF	0.000000299	J,DX q	0.000050	0.00000020	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,7,8,9-HxCDF	0.000000640	J,DX	0.000050	0.00000019	ug/L		02/03/23 10:06	02/07/23 14:39	1
2,3,4,6,7,8-HxCDF	0.000000315	J,DX q	0.000050	0.00000017	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,4,6,7,8-HpCDD	0.00000160	J,DX	0.000050	0.00000018	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,4,6,7,8-HpCDF	0.00000125	J,DX q	0.000050	0.00000023	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,4,7,8,9-HpCDF	0.000000762	J,DX	0.000050	0.00000024	ug/L		02/03/23 10:06	02/07/23 14:39	1
OCDD	0.00000491	J,DX	0.00010	0.00000033	ug/L		02/03/23 10:06	02/07/23 14:39	1
OCDF	0.00000107	J,DX q	0.00010	0.00000052	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total TCDD	ND		0.000010	0.0000011	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total TCDF	ND		0.000010	0.00000026	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total PeCDD	ND		0.000050	0.00000047	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total PeCDF	0.000000524	J,DX	0.000050	0.00000024	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total HxCDD	0.00000337	J,DX q	0.000050	0.00000031	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total HxCDF	0.00000162	J,DX q	0.000050	0.00000017	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total HpCDD	0.00000368	J,DX	0.000050	0.00000018	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total HpCDF	0.00000201	J,DX q	0.000050	0.00000023	ug/L		02/03/23 10:06	02/07/23 14:39	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*71*		*25 - 164*	*02/03/23 10:06*	*02/07/23 14:39*	*1*
13C-2,3,7,8-TCDF	*69*		*24 - 169*	*02/03/23 10:06*	*02/07/23 14:39*	*1*
13C-1,2,3,7,8-PeCDD	*72*		*25 - 181*	*02/03/23 10:06*	*02/07/23 14:39*	*1*
13C-1,2,3,7,8-PeCDF	*72*		*24 - 185*	*02/03/23 10:06*	*02/07/23 14:39*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-651610/1-A
Matrix: Water
Analysis Batch: 652417

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651610

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	65		21 - 178	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,4,7,8-HxCDD	65		32 - 141	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,6,7,8-HxCDD	69		28 - 130	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,4,7,8-HxCDF	58		26 - 152	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,6,7,8-HxCDF	70		26 - 123	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,7,8,9-HxCDF	78		29 - 147	02/03/23 10:06	02/07/23 14:39	1
13C-2,3,4,6,7,8-HxCDF	78		28 - 136	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,4,6,7,8-HpCDD	71		23 - 140	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,4,6,7,8-HpCDF	64		28 - 143	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,4,7,8,9-HpCDF	72		26 - 138	02/03/23 10:06	02/07/23 14:39	1
13C-OCDD	71		17 - 157	02/03/23 10:06	02/07/23 14:39	1
13C-OCDF	70		17 - 157	02/03/23 10:06	02/07/23 14:39	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	91		35 - 197	02/03/23 10:06	02/07/23 14:39	1

Lab Sample ID: LCS 320-651610/2-A
Matrix: Water
Analysis Batch: 652417

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 651610

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000219		ug/L		110	67 - 158		
2,3,7,8-TCDF			0.000200	0.000226		ug/L		113	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.00106		ug/L		106	70 - 142		
1,2,3,7,8-PeCDF			0.00100	0.00107	MB	ug/L		107	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.00107		ug/L		107	68 - 160		
1,2,3,4,7,8-HxCDD			0.00100	0.00104	MB	ug/L		104	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.00110	MB	ug/L		110	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.00109	MB	ug/L		109	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.00107	MB	ug/L		107	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.00109	MB	ug/L		109	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.00108	MB	ug/L		108	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.00109	MB	ug/L		109	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.00108	MB	ug/L		108	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.00110	MB	ug/L		110	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.00109	MB	ug/L		109	78 - 138		
OCDD			0.00200	0.00214	MB	ug/L		107	78 - 144		
OCDF			0.00200	0.00227	MB	ug/L		113	63 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	67		20 - 175
13C-2,3,7,8-TCDF	66		22 - 152
13C-1,2,3,7,8-PeCDD	70		21 - 227
13C-1,2,3,7,8-PeCDF	69		21 - 192
13C-2,3,4,7,8-PeCDF	68		13 - 328
13C-1,2,3,4,7,8-HxCDD	67		21 - 193
13C-1,2,3,6,7,8-HxCDD	72		25 - 163
13C-1,2,3,4,7,8-HxCDF	62		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-651610/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 652417 **Prep Batch: 651610**

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	71		21 - 159
13C-1,2,3,7,8,9-HxCDF	75		17 - 205
13C-2,3,4,6,7,8-HxCDF	74		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	69		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	66		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	70		20 - 186
13C-OCDD	71		13 - 199
13C-OCDF	70		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	89		31 - 191

Lab Sample ID: LCSD 320-651610/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 652417 **Prep Batch: 651610**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000220		ug/L		110	67 - 158	1	50
2,3,7,8-TCDF			0.000200	0.000235		ug/L		117	75 - 158	4	50
1,2,3,7,8-PeCDD			0.00100	0.00109		ug/L		109	70 - 142	3	50
1,2,3,7,8-PeCDF			0.00100	0.00111	MB	ug/L		111	80 - 134	4	50
2,3,4,7,8-PeCDF			0.00100	0.00111		ug/L		111	68 - 160	3	50
1,2,3,4,7,8-HxCDD			0.00100	0.00115	MB	ug/L		115	70 - 164	10	50
1,2,3,6,7,8-HxCDD			0.00100	0.00108	MB	ug/L		108	76 - 134	1	50
1,2,3,7,8,9-HxCDD			0.00100	0.00118	MB	ug/L		118	64 - 162	8	50
1,2,3,4,7,8-HxCDF			0.00100	0.00114	MB	ug/L		114	72 - 134	6	50
1,2,3,6,7,8-HxCDF			0.00100	0.00111	MB	ug/L		111	84 - 130	1	50
1,2,3,7,8,9-HxCDF			0.00100	0.00111	MB	ug/L		111	78 - 130	3	50
2,3,4,6,7,8-HxCDF			0.00100	0.00112	MB	ug/L		112	70 - 156	3	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.00112	MB	ug/L		112	70 - 140	4	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00114	MB	ug/L		114	82 - 122	3	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.00112	MB	ug/L		112	78 - 138	3	50
OCDD			0.00200	0.00221	MB	ug/L		111	78 - 144	3	50
OCDF			0.00200	0.00234	MB	ug/L		117	63 - 170	3	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	71		20 - 175
13C-2,3,7,8-TCDF	69		22 - 152
13C-1,2,3,7,8-PeCDD	74		21 - 227
13C-1,2,3,7,8-PeCDF	73		21 - 192
13C-2,3,4,7,8-PeCDF	69		13 - 328
13C-1,2,3,4,7,8-HxCDD	65		21 - 193
13C-1,2,3,6,7,8-HxCDD	74		25 - 163
13C-1,2,3,4,7,8-HxCDF	62		19 - 202
13C-1,2,3,6,7,8-HxCDF	73		21 - 159
13C-1,2,3,7,8,9-HxCDF	78		17 - 205
13C-2,3,4,6,7,8-HxCDF	78		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	73		26 - 166

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-651610/3-A
Matrix: Water
Analysis Batch: 652417

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 651610

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDF	67		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	74		20 - 186
13C-OCDD	76		13 - 199
13C-OCDF	74		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	91		31 - 191

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Specialty Organics

Prep Batch: 651610

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1 - RA	Outfall011_20230117_Comp	Total/NA	Water	1613B	
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	1613B	
MB 320-651610/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-651610/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-651610/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 652417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	1613B	651610
MB 320-651610/1-A	Method Blank	Total/NA	Water	1613B	651610
LCS 320-651610/2-A	Lab Control Sample	Total/NA	Water	1613B	651610
LCSD 320-651610/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	651610

Analysis Batch: 652595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1 - RA	Outfall011_20230117_Comp	Total/NA	Water	1613B	651610

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Client Sample ID: Outfall011_20230117_Comp
Lab Sample ID: 570-124392-1

Date Collected: 01/17/23 08:00
Matrix: Water
Date Received: 01/17/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		1048 mL	20.0 uL	651610	02/03/23 10:06	CGB	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	652595	02/08/23 19:19	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			1048 mL	20.0 uL	651610	02/03/23 10:06	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	652417	02/07/23 16:59	GRB	EET SAC
	Instrument ID: 12D5									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 570-124392-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23 *
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124392-1	Outfall011_20230117_Comp	Water	01/17/23 08:00	01/17/23 18:25

124392

Eurofins Calscience Irvine

570-124392 Chain of Custody

CHAIN OF CUSTODY FORM

Client Name/Address. Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002 011, 018] Outfall 011 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R Total Recoverable Metals. (E200.7) Zn (E200.8): Cu, Pb, Cd, Se	R TCDD (and all congeners) (E1613B)	R BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	R Surfactants (MBAS) (SM5540C/E425.1)	R Cl- SO_4, Nitrate-N, Nitrite-N NO3+NO2-N Perchlorate (E300)	R Turbidity TDS (SM2540C/E180.1)	R TSS (160.2 (SM2540D))	R Ammonia-N (350.2)	R alpha-BHC (E608)	R 2,4,6 TCP 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	R Total Recoverable Metals. Mercury (E245.1)	C Total Recoverable Metals. (E200.7) As, Mn, Fe		Comments
Outfall 011	Outfall011_20230117_Comp	1/17/2023 0800	WM	500 mL Poly	1	HNO_3	90	No	X										X	X		Outfall 011 analyze for As, Mn and Fe.
			WM	1 L Glass Amber	2	None	110	No		X												
			WM	1L Poly	1	None	115	No			X											
			WM	500 mL Poly	2	None	120	No				X										
			WM	500 mL Poly	2	None	130	No					X									48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X								48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X						
			WM	1 L Glass Amber	2	None	170	No									X					
			WM	1 L Glass Amber	2	None	180	No										X				
			WM	1L Poly	1	None	185	No							X							
	Outfall011_20230117_Comp_Extra	1/17/2023 0800	WM	1 L Glass Amber	2	None	110	No		H												Hold
			WM	500 mL Poly	2	None	120	No				H										Hold
			WM	500 mL Poly	2	None	130	No					H									Hold
			WM	1 L Glass Amber	2	None	170	No									H					Hold
			WM	1 L Glass Amber	2	None	180	No										H				Hold

Legend C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-17-2023/1245	H;A	[signature]	1/17/23 1245 EC
[signature]	1/17/23 1825	EC	[signature]	1/17/23 1825

Turn-around time: (Check)
24 Hour: ____ 72 Hour: ____ 10 Day: ___X___
48 Hour: ____ 5 Day: ____ Normal: ____

Sample Integrity: (Check)
Intact: ____ On Ice: ____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: ____ All Level IV: ___X___

1.9/19 1.7/17 SCH

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2/14/2023

2019-2020 Rainy Season
Version 4

CHAIN OF CUSTODY FORM

Client Name/Address. Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033 818.599.0702 (cell)

ANALYSIS REQUIRED

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R: Total Dissolved Metals. (E200.7) Zn (E200.8). Cu, Pb, Cd, Se	R: Cyanide (SM4500-CN-E / E335.2)	R: Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0) Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901 0 or E901 1)	R: Chronic Toxicity Selenastrum (EPA-821-R-02-013) ~~ABC Labs in Ventura, CA~~	R: Total Dissolved Metals. Mercury (E245.1)	C: Total Dissolved Metals (E200.7) As, Mn, Fe						Comments
Outfall 011	Outfall011_20230117_Comp_F	1/17/2023 / 0320	WM	1L Poly	1	None	200	No	X					X						Filter and preserve w/in 24hrs of receipt at lab. Outfall 011 analyze for As, Mn and Fe.
			WM	borosilicate vials	1	None	320	No					X							Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall011_20230117_Comp	1/17/2023 / 0300	WM	500 mL Poly	1	NaOH	220	No		X										
			WM	2.5 Gal Cube	1	None	225	No			X									Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No												
			~~WM~~	~~1 Gal Cube~~	~~6~~	~~None~~	~~235~~	~~No~~				~~X~~								~~Only test if first or second rain events of the year Deliver to ABC Labs in Ventura, CA.~~

Legend. A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:	
[signature]	1-17-2023/1245	H.A	[signature]	1/17/23 1245 EC	Turn-around time: (Check) 24 Hour ______ 72 Hour ______ 10 Day: __X__ 48 Hour ______ 5 Day ______ Normal ______
[signature]	1/17/23 1825	EC	[signature]	1/17/23 1825	Sample Integrity: (Check) Intact: ______ On Ice: ______
					Store samples for 6 months. Data Requirements. (Check) No Level IV: ______ All Level IV: __X__

VM 1/17 ~~2.3/2.3~~ 1.6/1.6 SC11

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2019-2020 Rainy Season
Version 4

2/14/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204509.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-124392-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 2/6/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 011 - Comp	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall011_20230117_Comp (570-124392-1)	1/17/23	08:00 Pacific		Water			X		2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.
Outfall011_20230117_Comp_Extra (570-124392-2)	1/17/23	08:00 Pacific		Water				X	2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by:	Date/Time: 1/18/23 1325	Company	Received by:	Date/Time: 1.19.23 910	Company		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company		
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: Seal		Cooler Temperature(s) °C and Other Remarks: 1.8C				

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124392-2

Login Number: 124392
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124392-2

Login Number: 124392
List Number: 3
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 01/19/23 11:49 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.8c 1.7c 2.0c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/23/2023 1:14:35 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 011 - Comp

JOB NUMBER

570-124392-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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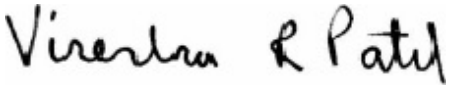
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-124392-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124392-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124392-3

Comments
No additional comments.

Receipt
The samples were received on 1/17/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 1.9º C.

RAD
Method 900.0: Gross Alpha Gross beta batch 598890
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall011_20230117_Comp (570-124392-1), (LCS 160-598890/2-A), (LCSB 160-598890/3-A), (MB 160-598890/1-A), (570-124392-R-1-I DU), (570-124392-R-1-G MS) and (570-124392-R-1-H MSBT)

Method 901.1: Gamma Prep Batch 160-597709
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Outfall011_20230117_Comp (570-124392-1), (570-124252-U-1-D) and (570-124252-U-1-F DU)

Method 903.0: Radium-226 batch 597616
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is

Job ID: 570-124392-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall011_20230117_Comp (570-124392-1), (LCS 160-597616/2-A), (MB 160-597616/1-A), (160-48612-B-1-A) and (160-48612-D-1-A DU)

Method 904.0: Radium 228 batch 597622
The LCS recovered at (126%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCS 160-597622/2-A)

Method 904.0: Radium 228 batch 597622
The detection goal was not met for the following sample(s). Samples are prepped at a reduced volume due to the presence of matrix interferences: Outfall011_20230117_Comp (570-124392-1), (160-48612-B-1-B) and (160-48612-D-1-B DU). Analytical results are reported with the detection limit achieved.

Method 904.0: Radium 228 batch 597622
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall011_20230117_Comp (570-124392-1), (LCS 160-597622/2-A), (MB 160-597622/1-A), (160-48612-B-1-B) and (160-48612-D-1-B DU)

Method 905: Strontium prep batch 160-597624:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall011_20230117_Comp (570-124392-1), (LCS 160-597624/2-A), (LCSD 160-597624/3-A) and (MB 160-597624/1-A)

Method 906.0: Tritium 598717
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall011_20230117_Comp (570-124392-1), (LCS 160-598717/2-A), (MB 160-598717/1-A), (570-124392-Q-1-B DU), (570-124868-Q-1-A) and (570-124868-Q-1-B MS)

Method A-01-R: Isotopic Uranium batch 598317
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall011_20230117_Comp (570-124392-1), (LCS 160-598317/2-A), (MB 160-598317/1-A), (570-124898-R-1-C) and (570-124898-R-1-D DU)

Method ExtChrom: Uranium Prep Batch 160-598317:

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: Outfall011_20230117_Comp (570-124392-1).

Method PrecSep_0:

Method PrecSep-21:

Job ID: 570-124392-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method PrecSep-7: Strontium-90 Prep Batch 160-597624

The following sample was prepared at a reduced aliquot due to Matrix: Outfall011_20230117_Comp (570-124392-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Client Sample ID: Outfall011_20230117_Comp
Lab Sample ID: 570-124392-1

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: Outfall011_20230117_Comp
Date Collected: 01/17/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124392-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	1.39		0.816	0.831	3.00	1.07	pCi/L	02/01/23 10:23	02/09/23 20:03	1
Gross Beta	1.96		0.682	0.710	4.00	0.880	pCi/L	02/01/23 10:23	02/09/23 20:03	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: Outfall011_20230117_Comp
Date Collected: 01/17/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124392-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	0.660	U	8.01	8.01	20.0	9.86	pCi/L	01/20/23 14:22	02/21/23 09:28	1
Potassium-40	47.3	U	53.6	53.8		80.9	pCi/L	01/20/23 14:22	02/21/23 09:28	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: Outfall011_20230117_Comp
Date Collected: 01/17/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124392-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0435	U	0.0982	0.0983	1.00	0.178	pCi/L	01/20/23 12:30	02/13/23 15:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*64.9*		*40 - 110*	*01/20/23 12:30*	*02/13/23 15:36*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: Outfall011_20230117_Comp **Lab Sample ID: 570-124392-1**
Date Collected: 01/17/23 08:00 **Matrix: Water**
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**2.02**	**G**	1.25	1.26	1.00	1.92	pCi/L	01/20/23 12:59	01/26/23 12:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*64.9*		*40 - 110*	*01/20/23 12:59*	*01/26/23 12:22*	*1*
Y Carrier	*40.4*		*40 - 110*	*01/20/23 12:59*	*01/26/23 12:22*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: Outfall011_20230117_Comp
Date Collected: 01/17/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124392-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.0563	U	0.274	0.274	3.00	0.495	pCi/L	01/20/23 13:08	01/30/23 17:23	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*84.4*		*40 - 110*	*01/20/23 13:08*	*01/30/23 17:23*	*1*
Y Carrier	*83.7*		*40 - 110*	*01/20/23 13:08*	*01/30/23 17:23*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: Outfall011_20230117_Comp
Lab Sample ID: 570-124392-1
Date Collected: 01/17/23 08:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	0.901	U	157	157	500	287	pCi/L	01/31/23 12:11	02/02/23 00:55	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: Outfall011_20230117_Comp
Lab Sample ID: 570-124392-1
Date Collected: 01/17/23 08:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	**0.490**		0.307	0.308	1.00	0.301	pCi/L	01/26/23 16:02	02/13/23 13:57	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
160-48612-D-1-A DU	Duplicate	79.4
570-124392-1	Outfall011_20230117_Comp	64.9
LCS 160-597616/2-A	Lab Control Sample	96.3
MB 160-597616/1-A	Method Blank	85.4

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
160-48612-D-1-B DU	Duplicate	79.4	50.1
570-124392-1	Outfall011_20230117_Comp	64.9	40.4
LCS 160-597622/2-A	Lab Control Sample	96.3	49.3
MB 160-597622/1-A	Method Blank	85.4	59.4

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-124392-1	Outfall011_20230117_Comp	84.4	83.7
LCS 160-597624/2-A	Lab Control Sample	90.8	84.1
LCSD 160-597624/3-A	Lab Control Sample Dup	87.3	88.2
MB 160-597624/1-A	Method Blank	89.1	85.6

Tracer/Carrier Legend

Sr = Sr Carrier

Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-124898-R-1-D DU	Duplicate	83.0
LCS 160-598317/2-A	Lab Control Sample	82.4
MB 160-598317/1-A	Method Blank	86.3

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-598890/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 599978
Prep Batch: 598890

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.2714	U	0.532	0.533	3.00	0.663	pCi/L	02/01/23 10:23	02/09/23 19:56	1
Gross Beta	0.07801	U	0.502	0.502	4.00	0.534	pCi/L	02/01/23 10:23	02/09/23 19:56	1

Lab Sample ID: LCS 160-598890/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 599978
Prep Batch: 598890

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	48.86		7.22	3.00	1.49	pCi/L	97	75 - 125

Lab Sample ID: LCSB 160-598890/3-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 599978
Prep Batch: 598890

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.7	64.26		6.95	4.00	0.610	pCi/L	87	75 - 125

Lab Sample ID: 570-124392-1 MS
Client Sample ID: Outfall011_20230117_Comp
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 600301
Prep Batch: 598890

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	1.39		50.5	48.54		6.80	3.00	1.88	pCi/L	93	60 - 140

Lab Sample ID: 570-124392-1 MSBT
Client Sample ID: Outfall011_20230117_Comp
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 600301
Prep Batch: 598890

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	1.96		73.7	68.82		7.39	4.00	0.852	pCi/L	91	60 - 140

Lab Sample ID: 570-124392-1 DU
Client Sample ID: Outfall011_20230117_Comp
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 600301
Prep Batch: 598890

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	1.39		1.494		0.935	3.00	1.28	pCi/L	0.06	1
Gross Beta	1.96		1.157		0.578	4.00	0.781	pCi/L	0.63	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-597709/1-A
Matrix: Water
Analysis Batch: 600999

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597709

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.201	U	9.37	9.37	20.0	11.7	pCi/L	01/20/23 14:22	02/20/23 18:19	1
Potassium-40	-11.33	U	161	161		182	pCi/L	01/20/23 14:22	02/20/23 18:19	1

Lab Sample ID: LCS 160-597709/2-A
Matrix: Water
Analysis Batch: 601005

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597709

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	137900		16400		298	pCi/L	102	75 - 125
Cesium-137	40900	42040		5010	20.0	72.3	pCi/L	103	75 - 125
Cobalt-60	18000	18800		2240		42.9	pCi/L	104	75 - 125

Lab Sample ID: 570-124252-U-1-F DU
Matrix: Water
Analysis Batch: 600999

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597709

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	0.848	U	-2.934	U	8.67	20.0	10.7	pCi/L	0.26	1
Potassium-40	59.2	U	133.7		94.8		91.6	pCi/L	0.49	1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-597616/1-A
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597616

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02734	U	0.0585	0.0585	1.00	0.106	pCi/L	01/20/23 12:30	02/13/23 15:23	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.4*		*40 - 110*	*01/20/23 12:30*	*02/13/23 15:23*	*1*

Lab Sample ID: LCS 160-597616/2-A
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597616

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	10.92		1.11	1.00	0.0938	pCi/L	96	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*96.3*		*40 - 110*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: 160-48612-D-1-A DU
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597616

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.0133	U		0.07048	U	0.0846	1.00	0.138	pCi/L			0.33	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*79.4*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-597622/1-A
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597622

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1588	U	0.399	0.399	1.00	0.686	pCi/L	01/20/23 12:59	01/26/23 12:13	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.4*		*40 - 110*	*01/20/23 12:59*	*01/26/23 12:13*	*1*
Y Carrier	*59.4*		*40 - 110*	*01/20/23 12:59*	*01/26/23 12:13*	*1*

Lab Sample ID: LCS 160-597622/2-A
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597622

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.24	10.41		1.36	1.00	0.674	pCi/L	126	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*96.3*		*40 - 110*
Y Carrier	*49.3*		*40 - 110*

Lab Sample ID: 160-48612-D-1-B DU
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597622

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.549	U G		0.3935	U	0.527	1.00	0.877	pCi/L			0.13	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*79.4*		*40 - 110*
Y Carrier	*50.1*		*40 - 110*

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-597624/1-A
Matrix: Water
Analysis Batch: 598611

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597624

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.1919	U	0.177	0.177	3.00	0.284	pCi/L	01/20/23 13:08	01/30/23 17:13	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*89.1*		*40 - 110*	*01/20/23 13:08*	*01/30/23 17:13*	*1*
Y Carrier	*85.6*		*40 - 110*	*01/20/23 13:08*	*01/30/23 17:13*	*1*

Lab Sample ID: LCS 160-597624/2-A
Matrix: Water
Analysis Batch: 598611

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597624

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.37	7.782		0.841	3.00	0.259	pCi/L	106	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*90.8*		*40 - 110*
Y Carrier	*84.1*		*40 - 110*

Lab Sample ID: LCSD 160-597624/3-A
Matrix: Water
Analysis Batch: 598611

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597624

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.37	7.236		0.795	3.00	0.281	pCi/L	98	75 - 125	0.33	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*87.3*		*40 - 110*
Y Carrier	*88.2*		*40 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-598717/1-A
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598717

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-27.93	U	147	147	500	270	pCi/L	01/31/23 12:11	02/01/23 21:31	1

Lab Sample ID: LCS 160-598717/2-A
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598717

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2110	1839		333	500	270	pCi/L	87	75 - 125		

Method: 906.0 - Tritium, Total (LSC) (Continued)

Lab Sample ID: 570-124868-Q-1-B MS
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598717

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Tritium	123	U	2160	2177		373	500	286	pCi/L	95	60 - 140

Lab Sample ID: 570-124392-1 DU
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Outfall011_20230117_Comp
Prep Type: Total/NA
Prep Batch: 598717

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Tritium	0.901	U	2.703	U	159	500	289	pCi/L	0.01	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-598317/1-A
Matrix: Water
Analysis Batch: 600238

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598317

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.1240		0.1019	0.1021	1.00	0.124	pCi/L	01/26/23 16:02	02/13/23 13:57	1

Lab Sample ID: LCS 160-598317/2-A
Matrix: Water
Analysis Batch: 600239

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598317

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Uranium-234	12.7	13.54		1.51	1.00	0.165	pCi/L	106	75 - 125
Uranium-238	13.0	14.49		1.59	1.00	0.112	pCi/L	111	75 - 125

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*82.4*		*30 - 110*

Lab Sample ID: 570-124898-R-1-D DU
Matrix: Water
Analysis Batch: 600216

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 598317

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Total Uranium	0.0800	U	0.1269	U	0.138	1.00	0.198	pCi/L	0.20	1

Rad

Prep Batch: 597616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	PrecSep-21	
MB 160-597616/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-597616/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
160-48612-D-1-A DU	Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 597622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	PrecSep_0	
MB 160-597622/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-597622/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
160-48612-D-1-B DU	Duplicate	Total/NA	Water	PrecSep_0	

Prep Batch: 597624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	PrecSep-7	
MB 160-597624/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-597624/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-597624/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 597709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	Fill_Geo-0	
MB 160-597709/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-597709/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-124252-U-1-F DU	Duplicate	Total/NA	Water	Fill_Geo-0	

Prep Batch: 598317

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	ExtChrom	
MB 160-598317/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-598317/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-124898-R-1-D DU	Duplicate	Total/NA	Water	ExtChrom	

Prep Batch: 598717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	LSC_Dist_Susp	
MB 160-598717/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-598717/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
570-124868-Q-1-B MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
570-124392-1 DU	Outfall011_20230117_Comp	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 598890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-1	Outfall011_20230117_Comp	Total/NA	Water	Evaporation	
MB 160-598890/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-598890/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-598890/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-124392-1 MS	Outfall011_20230117_Comp	Total/NA	Water	Evaporation	
570-124392-1 MSBT	Outfall011_20230117_Comp	Total/NA	Water	Evaporation	
570-124392-1 DU	Outfall011_20230117_Comp	Total/NA	Water	Evaporation	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Client Sample ID: Outfall011_20230117_Comp
Lab Sample ID: 570-124392-1
Date Collected: 01/17/23 08:00
Matrix: Water
Date Received: 01/17/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Evaporation			200.00 mL	1.0 g	598890	02/01/23 10:23	MST	EET SL
Total/NA	Analysis	900.0		1	1.0 mL	1.0 mL	599967	02/09/23 20:03	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	597709	01/20/23 14:22	JML	EET SL
Total/NA	Analysis	901.1		1			601098	02/21/23 09:28	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	PrecSep-21			745.41 mL	1.0 g	597616	01/20/23 12:30	DJP	EET SL
Total/NA	Analysis	903.0		1			600145	02/13/23 15:36	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			745.41 mL	1.0 g	597622	01/20/23 12:59	DJP	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	598283	01/26/23 12:22	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep-7			500.91 mL	1.0 g	597624	01/20/23 13:08	DJP	EET SL
Total/NA	Analysis	905		1			598612	01/30/23 17:23	SCB	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	LSC_Dist_Susp			104.60 mL	1.0 g	598717	01/31/23 12:11	SEH	EET SL
Total/NA	Analysis	906.0		1			599486	02/02/23 00:55	REV	EET SL
	Instrument ID: LSCAQUA									
Total/NA	Prep	ExtChrom			256.87 mL	1.0 mL	598317	01/26/23 16:02	MAL	EET SL
Total/NA	Analysis	A-01-R		1			600240	02/13/23 13:57	FLC	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 570-124392-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Job ID: 570-124392-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124392-1	Outfall011_20230117_Comp	Water	01/17/23 08:00	01/17/23 18:25

124392

Eurofins Calscience Irvine

570-124392 Chain of Custody

CHAIN OF CUSTODY FORM

Client Name/Address. Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002 011, 018] Outfall 011 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R Total Recoverable Metals. (E200.7) Zn (E200.8): Cu, Pb, Cd, Se	R TCDD (and all congeners) (E1613B)	R BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	R Surfactants (MBAS) (SM5540C/E425.1)	R Cl- SO_4, Nitrate-N, Nitrite-N NO3+NO2-N Perchlorate (E300)	R Turbidity TDS (SM2540C/E180.1)	R TSS (160.2 (SM2540D))	R Ammonia-N (350.2)	R alpha-BHC (E608)	R 2,4,6 TCP 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	R Total Recoverable Metals. Mercury (E245.1)	C Total Recoverable Metals. (E200.7) As, Mn, Fe		Comments
Outfall 011	Outfall011_20230117_Comp	1/17/2023 0800	WM	500 mL Poly	1	HNO_3	90	No	X										X	X		Outfall 011 analyze for As, Mn and Fe.
			WM	1 L Glass Amber	2	None	110	No		X												
			WM	1L Poly	1	None	115	No			X											
			WM	500 mL Poly	2	None	120	No				X										
			WM	500 mL Poly	2	None	130	No					X									48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X								48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X						
			WM	1 L Glass Amber	2	None	170	No									X					
			WM	1 L Glass Amber	2	None	180	No										X				
			WM	1L Poly	1	None	185	No							X							
	Outfall011_20230117_Comp_Extra	1/17/2023 0800	WM	1 L Glass Amber	2	None	110	No		H												Hold
			WM	500 mL Poly	2	None	120	No				H										Hold
			WM	500 mL Poly	2	None	130	No					H									Hold
			WM	1 L Glass Amber	2	None	170	No									H					Hold
			WM	1 L Glass Amber	2	None	180	No										H				Hold

Legend C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-17-2023/1245	H;A	[signature]	1/17/23 1245 EC
[signature]	1/17/23 1825	EC	[signature]	1/17/23 1825

Turn-around time: (Check)
24 Hour: ____ 72 Hour: ____ 10 Day: ___X___
48 Hour: ____ 5 Day: ____ Normal: ____

Sample Integrity: (Check)
Intact: ____ On Ice: ____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: ____ All Level IV: ___X___

1.9/19 1.7/17 SCH

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2/23/2023

2019-2020 Rainy Season
Version 4

124392

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

									R	R	R	R	R	C								
Client Name/Address. Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108 Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218 TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc. Sampler: Adrian Mobeka				Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell) Field Manager: Mark Dominick 978.234.5033 818.599.0702 (cell)					ANALYSIS REQUIRED											
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals. (E200.7) Zn (E200.8). Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0) Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA	Total Dissolved Metals. Mercury (E245.1)	Total Dissolved Metals (E200.7) As, Mn, Fe						Comments
Outfall 011	Outfall011_20230117_Comp_F	1/17/2023 0830	WM	1L Poly	1	None	200	No	X					X							Filter and preserve w/in 24hrs of receipt at lab. Outfall 011 analyze for As, Mn and Fe.
			WM	borosilicate vials	1	None	320	No					X								Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall011_20230117_Comp	1/17/2023 0830	WM	500 mL Poly	1	NaOH	220	No		X											
			WM	2.5 Gal Cube	1	None	225	No			X										Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No													
			WM	1 Gal Cube	6	None	235	No				X									Only test if first or second rain events of the year Deliver to ABC Labs in Ventura, CA.

Legend. A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-17-2023/1245	H.A	[signature]	1/17/23 1245 EC
[signature]	1/17/23 1825	EC	[signature]	1/17/23 1825
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: __X__

VM 1/17 ~~2.3/2.3~~ 1.6/1.6 SCH

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2019-2020 Rainy Season
Version 4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204484.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-124392-3
Address: 13715 Rider Trail North, ,	Due Date Requested: 2/21/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 011 - Comp	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitnc Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Evaporation Gross Alpha/Beta	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall011_20230117_Comp (570-124392-1)	1/17/23	08:00 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	01/18/23 13:00	FEDEX	FEDEX		
2	FEDEX			Briana Sharkey-Hazalet	1/19/23 9:00 AM	ETASTL
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124392-3

Login Number: 124392
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124392-3

Login Number: 124392
List Number: 2
Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis
List Creation: 01/19/23 11:16 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/4/2023 2:08:46 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 011 - Comp

JOB NUMBER

570-124392-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization

Virendra R Patil

Generated
3/4/2023 2:08:46 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-124392-4
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124392-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124392-4

Comments
No additional comments.

Receipt
The samples were received on 1/17/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 1.9º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Chronic-Selenestrum: This method was subcontracted to Aquatic Bioassay & Consulting. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-4
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Method	Method Description	Protocol	Laboratory
Subcontract	Chronic-Selenestrum	None	Aquatic

Protocol References:

None = None

Laboratory References:

Aquatic = Aquatic Bioassay & Consulting, 29 North Olive Street, Ventura, CA 93001

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124392-4
Project/Site: Boeing SSFL NPDES - Outfall 011 - Comp

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124392-2	Outfall011_20230117_Comp_Extra	Water	01/17/23 08:00	01/17/23 18:25

aquatic bioassay & consulting laboratories, inc

March 2, 2023

Mr. Virendra Patel
Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Dear Mr. Patel:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA-821-R-02-013.* Results were as follows:

CLIENT:	Eurofins Calscience
SAMPLE I.D.:	Outfall011_20230117_Comp_Extra (570-124392-2)
DATE RECEIVED:	27 Jan - 2023
ABC LAB. NO.:	CSE0123.199

CHRONIC SELENASTRUM ALGAE GROWTH BIOASSAY

IWC = 100.00 %

TST RESULT

GROWTH = PASS % EFFECT = -40.98 %

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 02 Mar-23 16:05 (p 1 of 1)
Test Code/ID: CSE0123.199 / 03-6463-4573

Selenastrum Growth Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	09-5142-9573	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	27 Jan-23 12:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	31 Jan-23 13:00	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Test Length:	4d 1h	**Taxon:**	Chlorophyta	**Source:**	Aquatic Biosystems, CO **Age:** 7d
Sample ID:	15-6996-0840	**Code:**	CSE0123.199	**Project:**	Boeing NPDES SSFL Outfalls
Sample Date:	17 Jan-23 08:00	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	27 Jan-23 11:05	**CAS (PC):**		**Station:**	Outfall011_20230117_Comp_Extra (5
Sample Age:	10d 4h (1 °C)	**Client:**	Eurofins Calscience		

SIngle Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
19-0261-8138	Cell Density	TST-Welch's t Test	<1.0E-05	100% passed cell density	1

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
19-0261-8138	Cell Density	Control CV	0.07399	<<	0.2	Yes	Passes Criteria
19-0261-8138	Cell Density	Control Resp	1.33E+6	1.00E+6	<<	Yes	Passes Criteria

Cell Density Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	8	1.328E+6	1.246E+6	1.411E+6	1.209E+6	1.441E+6	3.475E+4	9.830E+4	7.40%	0.00%
100		8	1.873E+6	1.823E+6	1.923E+6	1.804E+6	1.958E+6	2.112E+4	5.973E+4	3.19%	-40.98%

Cell Density Detail — MD5: 25C7A721C9DE8C2AF917825EF5EDFF70

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
0	N	1.312E+6	1.441E+6	1.209E+6	1.437E+6	1.441E+6	1.218E+6	1.283E+6	1.287E+6
100		1.808E+6	1.902E+6	1.831E+6	1.858E+6	1.804E+6	1.872E+6	1.950E+6	1.958E+6

Selenastrum Growth Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	19-0261-8138	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	02 Mar-23 16:04	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	02 Mar-23 16:03	**MD5 Hash:**	25C7A721C9DE8C2AF917825EF5EDFF70	**Editor ID:**	009-702-627-3
Batch ID:	09-5142-9573	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	27 Jan-23 12:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	31 Jan-23 13:00	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Test Length:	4d 1h	**Taxon:**	Chlorophyta	**Source:**	Aquatic Biosystems, CO **Age:** 7d
Sample ID:	15-6996-0840	**Code:**	CSE0123.199	**Project:**	Boeing NPDES SSFL Outfalls
Sample Date:	17 Jan-23 08:00	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	27 Jan-23 11:05	**CAS (PC):**		**Station:**	Outfall011_20230117_Comp_Extra (5
Sample Age:	10d 4h (1 °C)	**Client:**	Eurofins Calscience		

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	100% passed cell density endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(α:25%)
Negative Control		100*	13	26.13	0.6938	CDF	<1.0E-05	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.07399	<<	0.2	Yes	Passes Criteria
Control Resp	1.33E+6	1.00E+6	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	1.185E+12	1.185E+12	1	179.2	<1.0E-05	Significant Effect
Error	9.261E+10	6.615E+09	14			
Total	1.278E+12		15			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Levene Equality of Variance Test	3.783	8.862	0.0721	Equal Variances
	Mod Levene Equality of Variance Test	1.781	8.862	0.2033	Equal Variances
	Variance Ratio F Test	2.709	8.885	0.2120	Equal Variances
Distribution	Anderson-Darling A2 Test	0.5471	3.878	0.1630	Normal Distribution
	D'Agostino Skewness Test	0.389	2.576	0.6973	Normal Distribution
	Kolmogorov-Smirnov D Test	0.1493	0.2471	0.4622	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9194	0.8408	0.1650	Normal Distribution

Cell Density Summary

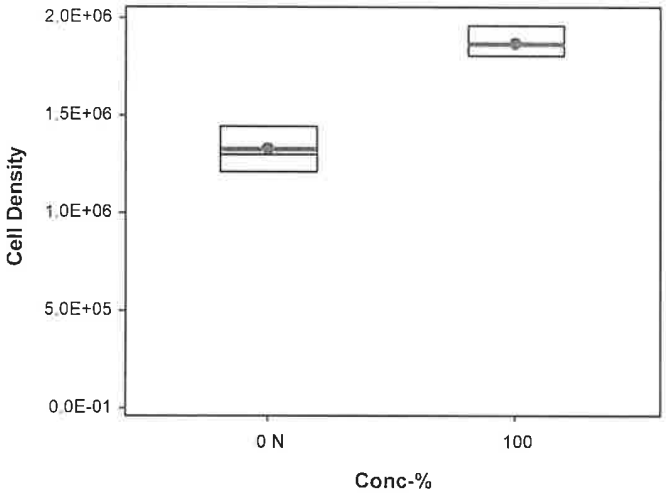
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	8	1.328E+6	1.246E+6	1.411E+6	1.300E+6	1.209E+6	1.441E+6	3.475E+4	7.40%	0.00%
100		8	1.873E+6	1.823E+6	1.923E+6	1.865E+6	1.804E+6	1.958E+6	2.112E+4	3.19%	-40.98%

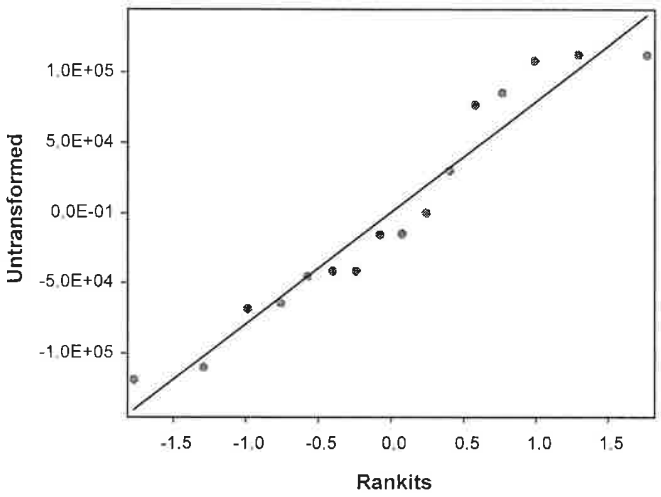
Cell Density Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
0	N	1.312E+6	1.441E+6	1.209E+6	1.437E+6	1.441E+6	1.218E+6	1.283E+6	1.287E+6
100		1.808E+6	1.902E+6	1.831E+6	1.858E+6	1.804E+6	1.872E+6	1.950E+6	1.958E+6

Analysis ID:	19-0261-8138	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	02 Mar-23 16:04	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	02 Mar-23 16:03	**MD5 Hash:**	25C7A721C9DE8C2AF917825EF5EDFF70	**Editor ID:**	009-702-627-3

Graphics





Selenastrum Growth Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	09-5142-9573	**Test Type:**	Cell Growth	**Analyst:**			
Start Date:	27 Jan-23 12:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water		
Ending Date:	31 Jan-23 13:00	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable		
Test Length:	4d 1h	**Taxon:**	Chlorophyta	**Source:**	Aquatic Biosystems, CO	**Age:**	7d
Sample ID:	15-6996-0840	**Code:**	CSE0123.199	**Project:**	Boeing NPDES SSFL Outfalls		
Sample Date:	17 Jan-23 08:00	**Material:**	Sample Water	**Source:**	Bioassay Report		
Receipt Date:	27 Jan-23 11:05	**CAS (PC):**		**Station:**	Outfall011_20230117_Comp_Extra (5		
Sample Age:	10d 4h (1 °C)	**Client:**	Eurofins Calscience				

Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	1	60	---	---	60	60	---	---	---	0
100		1	11	---	---	11	11	---	---	---	0
Overall		2	35.5	-275.8	346.8	11	60	24.5	34.65	97.60%	0 (0%)

Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	462.4	445.6	479.2	452	486	2.7	13.5	2.92%	0
100		5	239.8	223.8	255.8	227	259	2.571	12.85	5.36%	0
Overall		10	351.1	266.7	435.5	227	486	37.31	118	33.60%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	1	90	---	---	90	90	---	---	---	0
100		1	120	---	---	120	120	---	---	---	0
Overall		2	105	-85.59	295.6	90	120	15	21.21	20.20%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	7.78	7.497	8.063	7.4	8	0.04561	0.228	2.93%	0
100		5	7.64	7.572	7.708	7.6	7.7	0.01095	0.05477	0.72%	0
Overall		10	7.71	7.586	7.834	7.4	8	0.05467	0.1729	2.24%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	25.58	25.48	25.68	25.5	25.7	0.01675	0.08376	0.33%	0
100		5	25.58	25.48	25.68	25.5	25.7	0.01675	0.08376	0.33%	0
Overall		10	25.58	25.52	25.64	25.5	25.7	0.02494	0.07888	0.31%	0 (0%)

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

3/4/2023

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-205373.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Aquatic Bioassay		Accreditations Required (See note): State Program - California		Job #: 570-124392-4
Address: 29 North Olive Street,	Due Date Requested: 2/10/2023			
City: Ventura	TAT Requested (days):			
State, Zip: CA, 93001				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 011 - Comp	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Chronic-Selenestrum)/ Chronic-Selenestrum	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall011_20230117_Comp_Extra (570-124392-2)	1/17/23	08:00 Pacific		Water			X	1	

Temp. deg. C = 1.0 .199
Chlorine (mg/L) = <0.1
NH3 (mg/L) = <0.1

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
			Victor Mgy	1/27/23 1105	ABC LABS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

aquatic bioassay & consulting laboratories, inc

CHRONIC SELENASTRUM GROWTH BIOASSAY

DATE: 18 January - 2023

STANDARD TOXICANT: Cadmium Chloride

NOEC = 40.00 ug/l

IC25 = 61.58 ug/l
IC50 = 100.70 ug/l

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Selenastrum Growth Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	19-7334-5487	**Test Type:**	Cell Growth	**Analyst:**	Beth Maturino		
Start Date:	18 Jan-23 08:05	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water		
Ending Date:	22 Jan-23 10:04	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable		
Test Length:	4d 2h	**Taxon:**	Chlorophyta	**Source:**	Aquatic Biosystems, CO	**Age:**	7d
Sample ID:	03-7306-1795	**Code:**	SEL011823	**Project:**	REF TOX		
Sample Date:	18 Jan-23 08:05	**Material:**	Cadmium chloride	**Source:**	Reference Toxicant		
Receipt Date:	15 Feb-23 12:49	**CAS (PC):**		**Station:**	REF TOX		
Sample Age:	---	**Client:**	Internal Lab				

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	S
20-8216-7723	Cell Density	Steel Many-One Rank Sum Test		40	80	56.57	9.71%	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓	Level	µg/L	95% LCL	95% UCL	S
00-5848-8143	Cell Density	Linear Interpolation (ICPIN)		IC15	46.87	31.22	61.69	1
				IC20	54.23	38.54	66.51	
				IC25	61.58	48.16	72.16	
				IC40	84.1	71.17	93.27	
				IC50	100.7	89.07	108.1	

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
00-5848-8143	Cell Density	Control CV	0.02011	<<	0.2	Yes	Passes Criteria
20-8216-7723	Cell Density	Control CV	0.02011	<<	0.2	Yes	Passes Criteria
00-5848-8143	Cell Density	Control Resp	1.57E+6	1.00E+6	<<	Yes	Passes Criteria
20-8216-7723	Cell Density	Control Resp	1.57E+6	1.00E+6	<<	Yes	Passes Criteria

Cell Density Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	4	1.574E+6	1.523E+6	1.624E+6	1.530E+6	1.604E+6	1.582E+4	3.165E+4	2.01%	0.00%
20		4	1.736E+6	1.512E+6	1.960E+6	1.612E+6	1.919E+6	7.034E+4	1.407E+5	8.11%	-10.31%
40		4	1.484E+6	1.267E+6	1.700E+6	1.384E+6	1.684E+6	6.810E+4	1.362E+5	9.18%	5.70%
80		4	1.034E+6	9.000E+5	1.168E+6	9.110E+5	1.093E+6	4.204E+4	8.408E+4	8.13%	34.30%
140		4	4.348E+5	3.671E+5	5.024E+5	3.800E+5	4.740E+5	2.125E+4	4.250E+4	9.78%	72.37%
180		4	1.680E+5	1.490E+5	1.870E+5	1.530E+5	1.820E+5	5.958E+3	1.192E+4	7.09%	89.32%

Cell Density Detail — MD5: 62A5C0B144E7A937517FC2A5B150DC40

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.530E+6	1.604E+6	1.573E+6	1.587E+6
20		1.919E+6	1.612E+6	1.640E+6	1.772E+6
40		1.684E+6	1.417E+6	1.384E+6	1.450E+6
80		1.048E+6	1.093E+6	9.110E+5	1.083E+6
140		4.230E+5	4.620E+5	3.800E+5	4.740E+5
180		1.670E+5	1.820E+5	1.530E+5	1.700E+5

CETIS Analytical Report

Report Date: 15 Feb-23 14:05 (p 1 of 2)
Test Code/ID: SEL011823 / 15-8641-7867

Selenastrum Growth Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	20-8216-7723	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	15 Feb-23 12:54	**Analysis:**	Nonparametric-Control vs Treatments	**Status Level:**	1
Edit Date:	15 Feb-23 12:50	**MD5 Hash:**	62A5C0B144E7A937517FC2A5B150DC40	**Editor ID:**	004-984-722-8
Batch ID:	19-7334-5487	**Test Type:**	Cell Growth	**Analyst:**	Beth Maturino
Start Date:	18 Jan-23 08:05	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	22 Jan-23 10:04	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Test Length:	4d 2h	**Taxon:**	Chlorophyta	**Source:**	Aquatic Biosystems, CO **Age:** 7d
Sample ID:	03-7306-1795	**Code:**	SEL011823	**Project:**	REF TOX
Sample Date:	18 Jan-23 08:05	**Material:**	Cadmium chloride	**Source:**	Reference Toxicant
Receipt Date:	15 Feb-23 12:49	**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	Internal Lab		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Untransformed	C > T	40	80	56.57	---	152800	9.71%

Steel Many-One Rank Sum Test

Control	vs	Conc-µg/L	df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(α:5%)
Negative Control		20	6	26	10	0	CDF	0.9999	Non-Significant Effect
		40	6	14	10	0	CDF	0.3451	Non-Significant Effect
		80*	6	10	10	0	CDF	0.0417	Significant Effect
		140*	6	10	10	0	CDF	0.0417	Significant Effect
		180*	6	10	10	0	CDF	0.0417	Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.02011	<<	0.2	Yes	Passes Criteria
Control Resp	1.57E+6	1.00E+6	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	8.345E+12	1.669E+12	5	207.1	<1.0E-05	Significant Effect
Error	1.451E+11	8.06E+09	18			
Total	8.491E+12		23			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	15.98	15.09	0.0069	Unequal Variances
	Levene Equality of Variance Test	3.626	4.248	0.0192	Equal Variances
	Mod Levene Equality of Variance Test	1.569	4.248	0.2191	Equal Variances
Distribution	Anderson-Darling A2 Test	0.74	3.878	0.0536	Normal Distribution
	D'Agostino Kurtosis Test	1.481	2.576	0.1385	Normal Distribution
	D'Agostino Skewness Test	1.705	2.576	0.0882	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	5.102	9.21	0.0780	Normal Distribution
	Kolmogorov-Smirnov D Test	0.1445	0.2056	0.2157	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9168	0.884	0.0497	Normal Distribution

Cell Density Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	1.574E+6	1.523E+6	1.624E+6	1.580E+6	1.530E+6	1.604E+6	1.582E+4	2.01%	0.00%
20		4	1.736E+6	1.512E+6	1.960E+6	1.706E+6	1.612E+6	1.919E+6	7.034E+4	8.11%	-10.31%
40		4	1.484E+6	1.267E+6	1.700E+6	1.434E+6	1.384E+6	1.684E+6	6.810E+4	9.18%	5.70%
80		4	1.034E+6	9.000E+5	1.168E+6	1.066E+6	9.110E+5	1.093E+6	4.204E+4	8.13%	34.30%
140		4	4.348E+5	3.671E+5	5.024E+5	4.425E+5	3.800E+5	4.740E+5	2.125E+4	9.78%	72.37%
180		4	1.680E+5	1.490E+5	1.870E+5	1.685E+5	1.530E+5	1.820E+5	5.958E+3	7.09%	89.32%

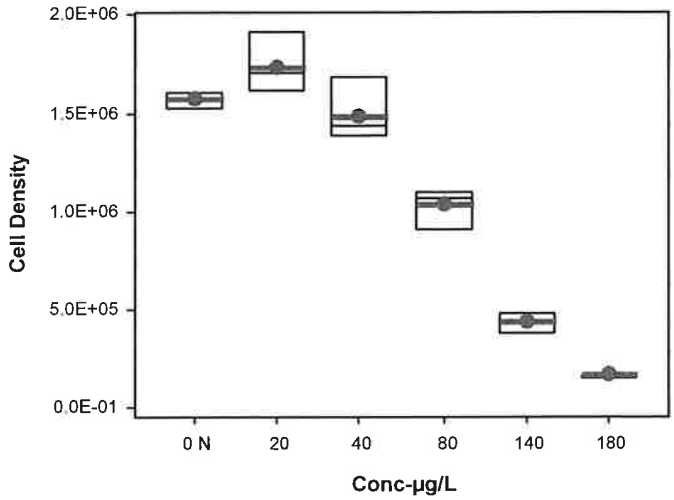
Selenastrum Growth Test — **Aquatic Bioassay & Consulting Labs, Inc.**

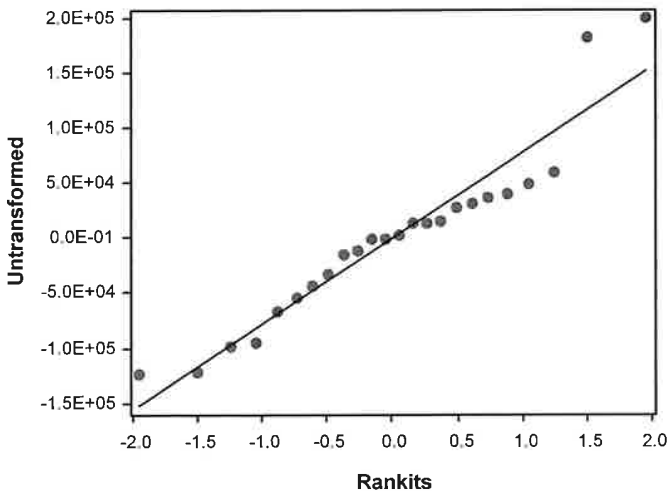
Analysis ID:	20-8216-7723	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	15 Feb-23 12:54	**Analysis:**	Nonparametric-Control vs Treatments	**Status Level:**	1
Edit Date:	15 Feb-23 12:50	**MD5 Hash:**	62A5C0B144E7A937517FC2A5B150DC40	**Editor ID:**	004-984-722-8

Cell Density Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.530E+6	1.604E+6	1.573E+6	1.587E+6
20		1.919E+6	1.612E+6	1.640E+6	1.772E+6
40		1.684E+6	1.417E+6	1.384E+6	1.450E+6
80		1.048E+6	1.093E+6	9.110E+5	1.083E+6
140		4.230E+5	4.620E+5	3.800E+5	4.740E+5
180		1.670E+5	1.820E+5	1.530E+5	1.700E+5

Graphics





CETIS Analytical Report

Selenastrum Growth Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	00-5848-8143	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	15 Feb-23 14:05	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	15 Feb-23 12:50	**MD5 Hash:**	62A5C0B144E7A937517FC2A5B150DC40	**Editor ID:**	004-984-722-8
Batch ID:	19-7334-5487	**Test Type:**	Cell Growth	**Analyst:**	Beth Maturino
Start Date:	18 Jan-23 08:05	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	22 Jan-23 10:04	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Test Length:	4d 2h	**Taxon:**	Chlorophyta	**Source:**	Aquatic Biosystems, CO **Age:** 7d
Sample ID:	03-7306-1795	**Code:**	SEL011823	**Project:**	REF TOX
Sample Date:	18 Jan-23 08:05	**Material:**	Cadmium chloride	**Source:**	Reference Toxicant
Receipt Date:	15 Feb-23 12:49	**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	Internal Lab		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control CV	0.02011	<<	0.2	Yes	Passes Criteria
Control Resp	1.57E+6	1.00E+6	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
IC15	46.87	31.22	61.69
IC20	54.23	38.54	66.51
IC25	61.58	48.16	72.16
IC40	84.1	71.17	93.27
IC50	100.7	89.07	108.1

Cell Density Summary

			Calculated Variate						Isotonic Variate	
Conc-µg/L	**Code**	**Count**	**Mean**	**Median**	**Min**	**Max**	**CV%**	**%Effect**	**Mean**	**%Effect**
0	N	4	1.574E+6	1.580E+6	1.530E+6	1.604E+6	2.01%	0.00%	1.655E+6	0.00%
20		4	1.736E+6	1.706E+6	1.612E+6	1.919E+6	8.11%	-10.31%	1.655E+6	0.00%
40		4	1.484E+6	1.434E+6	1.384E+6	1.684E+6	9.18%	5.70%	1.484E+6	10.33%
80		4	1.034E+6	1.066E+6	9.110E+5	1.093E+6	8.13%	34.30%	1.034E+6	37.52%
140		4	4.348E+5	4.425E+5	3.800E+5	4.740E+5	9.78%	72.37%	4.348E+5	73.73%
180		4	1.680E+5	1.685E+5	1.530E+5	1.820E+5	7.09%	89.32%	1.680E+5	89.85%

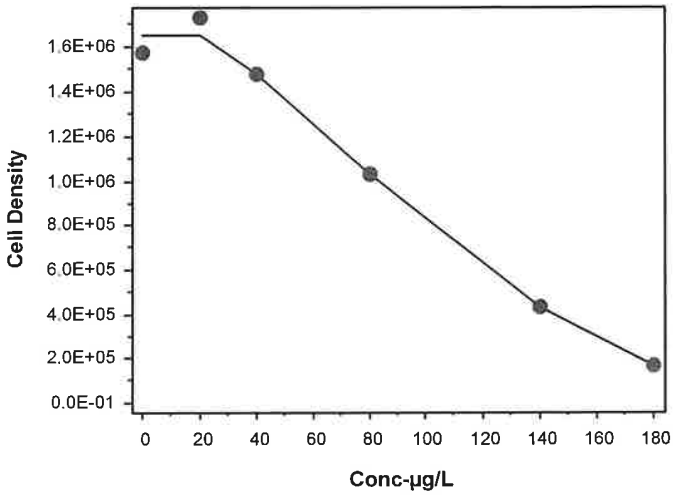
Cell Density Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.530E+6	1.604E+6	1.573E+6	1.587E+6
20		1.919E+6	1.612E+6	1.640E+6	1.772E+6
40		1.684E+6	1.417E+6	1.384E+6	1.450E+6
80		1.048E+6	1.093E+6	9.110E+5	1.083E+6
140		4.230E+5	4.620E+5	3.800E+5	4.740E+5
180		1.670E+5	1.820E+5	1.530E+5	1.700E+5

Selenastrum Growth Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	00-5848-8143	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	15 Feb-23 14:05	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	15 Feb-23 12:50	**MD5 Hash:**	62A5C0B144E7A937517FC2A5B150DC40	**Editor ID:**	004-984-722-8

Graphics



CETIS Measurement Report

Selenastrum Growth Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	19-7334-5487	**Test Type:**	Cell Growth	**Analyst:**	Beth Maturino	
Start Date:	18 Jan-23 08:05	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water	
Ending Date:	22 Jan-23 10:04	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable	
Test Length:	4d 2h	**Taxon:**	Chlorophyta	**Source:**	Aquatic Biosystems, CO	**Age:** 7d

Sample ID:	03-7306-1795	**Code:**	SEL011823	**Project:**	REF TOX	
Sample Date:	18 Jan-23 08:05	**Material:**	Cadmium chloride	**Source:**	Reference Toxicant	
Receipt Date:	15 Feb-23 12:49	**CAS (PC):**		**Station:**	REF TOX	
Sample Age:	---	**Client:**	Internal Lab			

Alkalinity (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	1	103	---	---	103	103	---	---	---	0
20		1	83	---	---	83	83	---	---	---	0
40		1	73	---	---	73	73	---	---	---	0
80		1	69	---	---	69	69	---	---	---	0
140		1	70	---	---	70	70	---	---	---	0
180		1	86	---	---	86	86	---	---	---	0
Overall		6	80.67	67.05	94.28	69	103	5.296	12.97	16.08%	0 (0%)

Conductivity-µmhos

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	457.4	453.5	461.3	452	460	0.6261	3.13	0.68%	0
20		5	505.8	471.7	539.9	466	528	5.5	27.5	5.44%	0
40		5	450.6	445.9	455.3	447	455	0.7563	3.782	0.84%	0
80		5	422.2	416.3	428.1	416	428	0.9529	4.764	1.13%	0
140		5	394.4	392.3	396.5	393	397	0.3347	1.673	0.42%	0
180		5	374	372.8	375.2	373	375	0.2	1	0.27%	0
Overall		30	434.1	417.1	451	373	528	8.281	45.36	10.45%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	1	140	---	---	140	140	---	---	---	0
20		1	115	---	---	115	115	---	---	---	0
40		1	120	---	---	120	120	---	---	---	0
80		1	115	---	---	115	115	---	---	---	0
140		1	108	---	---	108	108	---	---	---	0
180		1	86	---	---	86	86	---	---	---	0
Overall		6	114	95.62	132.4	86	140	7.151	17.52	15.36%	0 (0%)

pH-Units

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	7.68	7.544	7.816	7.6	7.8	0.02191	0.1095	1.43%	0
20		5	7.66	7.549	7.771	7.6	7.8	0.01789	0.08944	1.17%	0
40		5	7.7	7.612	7.788	7.6	7.8	0.01414	0.07071	0.92%	0
80		5	7.72	7.664	7.776	7.7	7.8	0.008945	0.04472	0.58%	0
140		5	7.7	7.612	7.788	7.6	7.8	0.01414	0.07071	0.92%	0
180		5	7.72	7.664	7.776	7.7	7.8	0.008945	0.04472	0.58%	0
Overall		30	7.697	7.67	7.723	7.6	7.8	0.01312	0.07184	0.93%	0 (0%)

Temperature-°C

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	25.56	25.25	25.87	25.2	25.8	0.0502	0.251	0.98%	0
20		5	25.56	25.25	25.87	25.2	25.8	0.0502	0.251	0.98%	0
40		5	25.56	25.25	25.87	25.2	25.8	0.0502	0.251	0.98%	0
80		5	25.56	25.25	25.87	25.2	25.8	0.0502	0.251	0.98%	0
140		5	25.56	25.25	25.87	25.2	25.8	0.0502	0.251	0.98%	0
180		5	25.56	25.25	25.87	25.2	25.8	0.0502	0.251	0.98%	0
Overall		30	25.56	25.47	25.65	25.2	25.8	0.04169	0.2283	0.89%	0 (0%)

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Thursday, January 26, 2023 1:58 PM
To: Virendra Patel
Cc: Rapp, Kerry
Subject: 570-124392-1 chronic tox

Importance: High

EXTERNAL EMAIL*

Virendra,

We missed sending chronic tox on OF011 for 1/17 sample 570-124392-1. Could you send the extra volume to ABC?

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

124392

Eurofins Calscience Irvine

570-124392 Chain of Custody

CHAIN OF CUSTODY FORM

Client Name/Address. Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002 011, 018] Outfall 011 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED															
									R	R	R	R	R	R	R	R	R	R	R	R	C			
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals. (E200.7) Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl- SO_4, Nitrate-N, Nitrite-N NO3+NO2-N Perchlorate (E300)	Turbidity TDS (SM2540C/E160.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals. Mercury (E245.1)	Total Recoverable Metals. (E200.7) As, Mn, Fe			Comments
Outfall 011	Outfall011_20230117_Comp	1/17/2023 0800	WM	500 mL Poly	1	HNO_3	90	No	X										X	X			Outfall 011 analyze for As, Mn and Fe.
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	1L Poly	1	None	115	No			X												
			WM	500 mL Poly	2	None	120	No				X											
			WM	500 mL Poly	2	None	130	No					X										48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X									48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X							
			WM	1 L Glass Amber	2	None	170	No									X						
			WM	1 L Glass Amber	2	None	180	No										X					
			WM	1L Poly	1	None	185	No							X								
	Outfall011_20230117_Comp_Extra	1/17/2023 0800	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	500 mL Poly	2	None	120	No				H											Hold
			WM	500 mL Poly	2	None	130	No					H										Hold
			WM	1 L Glass Amber	2	None	170	No									H						Hold
			WM	1 L Glass Amber	2	None	180	No										H					Hold

Legend C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-17-2023/1245	H;A	[signature]	1/17/23 1245 EC
[signature]	1/17/23 1825	EC	[signature]	1/17/23 1825

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal. _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: ___X___

1.9/4.9 1.7/17 SCH

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3/4/2023

2019-2020 Rainy Season
Version 4

124392

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Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address. Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R: Total Dissolved Metals. (E200.7) Zn (E200.8). Cu, Pb, Cd, Se	R: Cyanide (SM4500-CN-E / E335.2)	R: Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0) Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R: Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA	R: Total Dissolved Metals. Mercury (E245.1)	C: Total Dissolved Metals (E200.7) As, Mn, Fe	Comments
Outfall 011	Outfall011_20230117_Comp_F	1/17/2023 0830	WM	1L Poly	1	None	200	No	X					X	Filter and preserve w/in 24hrs of receipt at lab. Outfall 011 analyze for As, Mn and Fe.
			WM	borosilicate vials	1	None	320	No					X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall011_20230117_Comp	1/17/2023 0830	WM	500 mL Poly	1	NaOH	220	No		X					
			WM	2.5 Gal Cube	1	None	225	No			X				Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No							
			WM	1 Gal Cube	6	None	235	No				X			Only test if first or second rain events of the year Deliver to ABC Labs in Ventura, CA

Legend. A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-17-2023/1245	H.A	[signature]	1/17/23 1245 EC
[signature]	1/17/23 1825	EC	[signature]	1/17/23 1825

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements. (Check)
No Level IV: _____ All Level IV: __X__

VM 1/17 ~~2.3/2.3~~ 16/1.6 SCH

3/4/2023

2019-2020 Rainy Season
Version 4

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Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124392-4

Login Number: 124392
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/3/2023 3:45:52 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 011 - GRAB

JOB NUMBER

570-124872-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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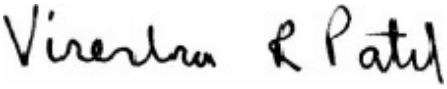
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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2/3/2023 3:45:52 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-124872-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - GRAB

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc. Job ID: 570-124872-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - GRAB

Job ID: 570-124872-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124872-1

Comments
No additional comments.

Receipt
The samples were received on 1/20/2023 6:30 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.1º C, 2.5º C and 3.0º C.

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-297633. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method SM 2540F: Insufficient sample volume was available to perform a sample duplicate (DUP) associated with analytical batch 570-297620.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 1664A: The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-298543.
Method: 1664.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124872-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - GRAB

Client Sample ID: Outfall011_20230120_Grab
Lab Sample ID: 570-124872-1

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	81		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA

Client Sample ID: TB-20230120
Lab Sample ID: 570-124872-3

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc. Job ID: 570-124872-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - GRAB

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: Outfall011_20230120_Grab **Lab Sample ID: 570-124872-1**
Date Collected: 01/20/23 11:20 **Matrix: Water**
Date Received: 01/20/23 18:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/21/23 22:08	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/21/23 22:08	1
Trichloroethene	ND		0.50	0.17	ug/L			01/21/23 22:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*60 - 140*		*01/21/23 22:08*	*1*
Toluene-d8 (Surr)	*99*		*60 - 140*		*01/21/23 22:08*	*1*

Client Sample ID: TB-20230120 **Lab Sample ID: 570-124872-3**
Date Collected: 01/20/23 11:20 **Matrix: Water**
Date Received: 01/20/23 18:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/21/23 19:30	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/21/23 19:30	1
Trichloroethene	ND		0.50	0.17	ug/L			01/21/23 19:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*60 - 140*		*01/21/23 19:30*	*1*
Toluene-d8 (Surr)	*95*		*60 - 140*		*01/21/23 19:30*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-124872-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - GRAB

General Chemistry

Client Sample ID: Outfall011_20230120_Grab
Lab Sample ID: 570-124872-1
Date Collected: 01/20/23 11:20
Matrix: Water
Date Received: 01/20/23 18:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM: Oil and Grease (1664A)	ND		0.99	0.51	mg/L		01/25/23 13:07	01/25/23 20:05	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance (SM 2510B)	**81**		1.0	1.0	umhos/cm			01/30/23 16:22	1
Settleable Solids (SM 2540F)	ND		0.10	0.10	mL/L			01/21/23 09:59	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 011 - GRAB

Job ID: 570-124872-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		BFB	TOL								
Lab Sample ID	Client Sample ID	(60-140)	(60-140)								
570-124872-1	Outfall011_20230120_Grab	102	99								
570-124872-3	TB-20230120	102	95								
LCS 570-297633/1003	Lab Control Sample	102	99								
LCSD 570-297633/4	Lab Control Sample Dup	100	101								
MB 570-297633/6	Method Blank	98	97								

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-297633/6
Matrix: Water
Analysis Batch: 297633

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/21/23 12:23	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/21/23 12:23	1
Trichloroethene	ND		0.50	0.17	ug/L			01/21/23 12:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*		*01/21/23 12:23*	*1*
Toluene-d8 (Surr)	*97*		*60 - 140*		*01/21/23 12:23*	*1*

Lab Sample ID: LCS 570-297633/1003
Matrix: Water
Analysis Batch: 297633

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1-Dichloroethene			10.0	9.90		ug/L		99	50 - 150		
1,2-Dichloroethane			10.0	9.77		ug/L		98	70 - 130		
Trichloroethene			10.0	10.0		ug/L		100	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*60 - 140*
Toluene-d8 (Surr)	*99*		*60 - 140*

Lab Sample ID: LCSD 570-297633/4
Matrix: Water
Analysis Batch: 297633

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene			10.0	9.59		ug/L		96	50 - 150	3	32
1,2-Dichloroethane			10.0	9.76		ug/L		98	70 - 130	0	49
Trichloroethene			10.0	9.34		ug/L		93	65 - 135	7	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*60 - 140*
Toluene-d8 (Surr)	*101*		*60 - 140*

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-298543/1-A
Matrix: Water
Analysis Batch: 298672

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 298543

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM: Oil and Grease	ND		1.0	0.51	mg/L		01/25/23 13:07	01/25/23 20:05	1

Method: 1664A - HEM and SGT-HEM (Continued)

Lab Sample ID: LCS 570-298543/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 298672 — **Prep Batch: 298543**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM: Oil and Grease	40.0	38.1		mg/L		95	78 - 114

Lab Sample ID: LCSD 570-298543/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 298672 — **Prep Batch: 298543**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM: Oil and Grease	40.0	38.6		mg/L		97	78 - 114	1	18

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-299719/7 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 299719

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			01/30/23 15:46	1

Lab Sample ID: 570-124688-K-4 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 299719

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Specific Conductance	630		640		umhos/cm		1	25

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124872-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - GRAB

GC/MS VOA

Analysis Batch: 297633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124872-1	Outfall011_20230120_Grab	Total/NA	Water	624.1	
570-124872-3	TB-20230120	Total/NA	Water	624.1	
MB 570-297633/6	Method Blank	Total/NA	Water	624.1	
LCS 570-297633/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-297633/4	Lab Control Sample Dup	Total/NA	Water	624.1	

General Chemistry

Analysis Batch: 297620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124872-1	Outfall011_20230120_Grab	Total/NA	Water	SM 2540F	

Prep Batch: 298543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124872-1	Outfall011_20230120_Grab	Total/NA	Water	1664A	
MB 570-298543/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-298543/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-298543/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 298672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124872-1	Outfall011_20230120_Grab	Total/NA	Water	1664A	298543
MB 570-298543/1-A	Method Blank	Total/NA	Water	1664A	298543
LCS 570-298543/2-A	Lab Control Sample	Total/NA	Water	1664A	298543
LCSD 570-298543/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	298543

Analysis Batch: 299719

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124872-1	Outfall011_20230120_Grab	Total/NA	Water	SM 2510B	
MB 570-299719/7	Method Blank	Total/NA	Water	SM 2510B	
570-124688-K-4 DU	Duplicate	Total/NA	Water	SM 2510B	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124872-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - GRAB

Client Sample ID: Outfall011_20230120_Grab
Lab Sample ID: 570-124872-1
Date Collected: 01/20/23 11:20
Matrix: Water
Date Received: 01/20/23 18:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	297633	01/21/23 22:08	A1W	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Prep	1664A			1010 mL	1000 mL	298543	01/25/23 13:07	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			298672	01/25/23 20:05	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									
Total/NA	Analysis	SM 2510B		1			299719	01/30/23 16:22	BDH9	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	297620	01/21/23 09:59	ZVB7	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB-20230120
Lab Sample ID: 570-124872-3
Date Collected: 01/20/23 11:20
Matrix: Water
Date Received: 01/20/23 18:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	297633	01/21/23 19:30	A1W	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124872-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - GRAB

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124872-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - GRAB

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4

Protocol References:

1664A = EPA-821-98-002

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124872-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - GRAB

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124872-1	Outfall011_20230120_Grab	Water	01/20/23 11:20	01/20/23 18:30
570-124872-3	TB-20230120	Water	01/20/23 11:20	01/20/23 18:30

124872

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Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

TRAEFT98

Client Name/Address:	Project:	Field Readings	Meter serial #
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Grab	Field Readings (Include units) Time of Readings: 1120 DO 17.26 mg/L pH 7.89 pH unit Temp 47.1 °C/°F	
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218			
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	Field readings QC Checked by: Date/Time: 1-20-2023/1120	
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)		

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R Oil & Grease (E1664A-HEM)	R VOCs - only 1,1-DCE, 1,2-DCA, TCE (E624)	R Settleable Solids (E160.5 (SM2540F))	R Conductivity (SM2510B / E120.1)	Comments
Outfall 011	Outfall011_20230120_Grab	1/20/2023 1120	WM	1 L Glass Amber	2	HCl	15	No	X				
			WM	40 mL VOA	3	HCl	30	No		X			
			WM	1L Poly	1	None	70	No			X		
			WM	500 mL Poly	1	None	75	No				X	
	Outfall011_20230120_Grab_Extra	1/20/2023 1120	WM										
			WM	40 mL VOA	3	HCl	30	No		H			Hold
			WM	500 mL Poly	1	None	75	No				H	Hold
Trip Blanks	TB-20230120	1/20/2023 1120	WQ	40 mL VOA	3	HCl	30	No		X			

570-124872 Chain of Custody

Legend: R=Routine

Relinquished By	Date/Time:	Company	Received By	Date/Time:	
	1-20-2023/1310	H&A		1/20/23 1310	EC
	1/20/23 1830	EC		1/20/23 1830	

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: X
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: X

3.0/3.0 2.5/2.5 2.1/2.1 SCII

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2/3/2023

2019-2020 Rainy Season
Version 4

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124872-1

Login Number: 124872
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 011 - COMP

JOB NUMBER

570-124873-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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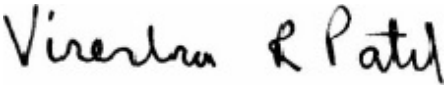
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
BB	Sample > 4X spike concentration
EY	Result exceeds normal dynamic range; reported as a min. est.
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
IB	CCV recovery above limit; analyte not detected
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)
MB	Analyte present in the method blank

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124873-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124873-1

Comments
No additional comments.

Receipt
The samples were received on 1/20/2023 6:30 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.5º C, 1.7º C and 2.1º C.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

HPLC/IC
Method 300.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 570-297603 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Chloride and Sulfate in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

Method 300.0: Due to the high concentration of Chloride and Sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 570-297603 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method 300.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 570-297602 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Nitrate as N in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

Method 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for Nitrite as N for analytical batch 570-297602 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 200.7 Rev 4.4: The matrix spike (MS) recoveries of Iron for preparation batch 570-298189 and analytical batch 570-298286 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 245.1: The continuing calibration verification (CCV) associated with batch 570-298644 recovered above the upper control limit for Mercury. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 570-298459/9-A).

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: Outfall011_20230120_Comp_F (570-124873-3). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 2540D: The sample duplicate (DUP) precision for analytical batch 570-297872 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

Job ID: 570-124873-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-297984. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.
Method 608.1

Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-298062. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. 625 Sim

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Client Sample ID: Outfall011_20230120_Comp
Lab Sample ID: 570-124873-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.8		1.0	0.36	mg/L	1		300.0	Total/NA
Nitrate as N	1.1		0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate	5.6		1.0	0.24	mg/L	1		300.0	Total/NA
Nitrate Nitrite as N	1.1		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Copper	1.4	J,DX	2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	0.13	J,DX MB	1.0	0.12	ug/L	1		200.8	Total Recoverable
Iron	220		20	3.7	ug/L	1		200.8	Total Recoverable
Arsenic	1.5		1.0	0.16	ug/L	1		200.8	Total Recoverable
Zinc	2.9	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Manganese	5.1		1.0	0.41	ug/L	1		200.8	Total Recoverable
Ammonia	0.056	J,DX	0.075	0.032	mg/L	1		350.1	Total/NA
Turbidity	6.2		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Dissolved Solids	86		10	8.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	2.3		1.0	0.83	mg/L	1		SM 2540D	Total/NA

Client Sample ID: Outfall011_20230120_Comp_F
Lab Sample ID: 570-124873-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	1.2	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	74	BU	20	3.7	ug/L	1		200.8	Dissolved
Arsenic	1.4	BU	1.0	0.16	ug/L	1		200.8	Dissolved
Manganese	3.3	BU	1.0	0.41	ug/L	1		200.8	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: Outfall011_20230120_Comp
Lab Sample ID: 570-124873-1
Date Collected: 01/20/23 11:20
Matrix: Water
Date Received: 01/20/23 18:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		0.96	0.13	ug/L		01/24/23 08:32	02/02/23 20:06	1
2,4-Dinitrotoluene	ND		0.19	0.11	ug/L		01/24/23 08:32	02/02/23 20:06	1
Bis(2-ethylhexyl) phthalate	ND		4.8	3.4	ug/L		01/24/23 08:32	02/02/23 20:06	1
N-Nitrosodimethylamine	ND		0.19	0.18	ug/L		01/24/23 08:32	02/02/23 20:06	1
Pentachlorophenol	ND		0.96	0.81	ug/L		01/24/23 08:32	02/02/23 20:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*72*		*31 - 120*	*01/24/23 08:32*	*02/02/23 20:06*	*1*
Phenol-d6 (Surr)	*36*		*10 - 120*	*01/24/23 08:32*	*02/02/23 20:06*	*1*
p-Terphenyl-d14 (Surr)	*76*		*45 - 120*	*01/24/23 08:32*	*02/02/23 20:06*	*1*
2,4,6-Tribromophenol	*94*		*28 - 127*	*01/24/23 08:32*	*02/02/23 20:06*	*1*
2-Fluorophenol	*57*		*17 - 120*	*01/24/23 08:32*	*02/02/23 20:06*	*1*
Nitrobenzene-d5	*85*		*27 - 120*	*01/24/23 08:32*	*02/02/23 20:06*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: 40CFR136A 608.3 - Organochlorine Pesticides in Water

Client Sample ID: Outfall011_20230120_Comp
Lab Sample ID: 570-124873-1
Date Collected: 01/20/23 11:20
Matrix: Water
Date Received: 01/20/23 18:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		01/23/23 18:56	01/31/23 15:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*34*		*20 - 139*	*01/23/23 18:56*	*01/31/23 15:23*	*1*
DCB Decachlorobiphenyl (Surr)	*31*		*20 - 154*	*01/23/23 18:56*	*01/31/23 15:23*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: Outfall011_20230120_Comp
Lab Sample ID: 570-124873-1
Date Collected: 01/20/23 11:20
Matrix: Water
Date Received: 01/20/23 18:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.8**		1.0	0.36	mg/L			01/21/23 11:33	1
Nitrite as N	ND		0.10	0.043	mg/L			01/21/23 11:33	1
Nitrate as N	**1.1**		0.10	0.020	mg/L			01/21/23 11:33	1
Sulfate	**5.6**		1.0	0.24	mg/L			01/21/23 11:33	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: Outfall011_20230120_Comp
Lab Sample ID: 570-124873-1
Date Collected: 01/20/23 11:20
Matrix: Water
Date Received: 01/20/23 18:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/27/23 04:02	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: Outfall011_20230120_Comp
Lab Sample ID: 570-124873-1
Date Collected: 01/20/23 11:20
Matrix: Water
Date Received: 01/20/23 18:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	1.1		0.10	0.020	mg/L			01/24/23 12:20	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: Outfall011_20230120_Comp
Lab Sample ID: 570-124873-1
Date Collected: 01/20/23 11:20
Matrix: Water
Date Received: 01/20/23 18:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/24/23 09:53	01/24/23 14:22	1
Copper	**1.4**	**J,DX**	2.0	0.32	ug/L		01/24/23 09:53	01/24/23 14:22	1
Lead	**0.13**	**J,DX MB**	1.0	0.12	ug/L		01/24/23 09:53	01/24/23 14:22	1
Selenium	ND		2.0	0.52	ug/L		01/24/23 09:53	01/24/23 14:22	1
Iron	**220**		20	3.7	ug/L		01/24/23 09:53	01/24/23 14:22	1
Arsenic	**1.5**		1.0	0.16	ug/L		01/24/23 09:53	01/24/23 14:22	1
Zinc	**2.9**	**J,DX**	20	2.8	ug/L		01/24/23 09:53	01/24/23 14:22	1
Manganese	**5.1**		1.0	0.41	ug/L		02/01/23 11:07	02/01/23 14:12	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: Outfall011_20230120_Comp_F
Lab Sample ID: 570-124873-3
Date Collected: 01/20/23 11:20
Matrix: Water
Date Received: 01/20/23 18:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			01/25/23 14:41	1
Copper	**1.2**	**J,DX BU**	2.0	0.32	ug/L			01/25/23 14:41	1
Lead	ND	BU	1.0	0.12	ug/L			01/25/23 14:41	1
Selenium	ND	BU	2.0	0.52	ug/L			01/25/23 14:41	1
Iron	**74**	**BU**	20	3.7	ug/L			01/25/23 14:41	1
Arsenic	**1.4**	**BU**	1.0	0.16	ug/L			01/25/23 14:41	1
Zinc	ND	BU	20	2.8	ug/L			01/25/23 14:41	1
Manganese	**3.3**	**BU**	1.0	0.41	ug/L			01/25/23 14:41	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: Outfall011_20230120_Comp
Lab Sample ID: 570-124873-1
Date Collected: 01/20/23 11:20
Matrix: Water
Date Received: 01/20/23 18:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	IB	0.20	0.12	ug/L		01/24/23 17:46	01/25/23 15:54	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: Outfall011_20230120_Comp_F
Lab Sample ID: 570-124873-3
Date Collected: 01/20/23 11:20
Matrix: Water
Date Received: 01/20/23 18:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	BU	0.20	0.12	ug/L		01/24/23 18:15	01/25/23 15:20	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

General Chemistry

Client Sample ID: Outfall011_20230120_Comp
Lab Sample ID: 570-124873-1
Date Collected: 01/20/23 11:20
Matrix: Water
Date Received: 01/20/23 18:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	**0.056**	**J,DX**	0.075	0.032	mg/L		01/30/23 12:27	01/30/23 14:33	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			01/23/23 15:05	1
Turbidity (SM 2130B)	**6.2**		0.05	0.05	NTU			01/21/23 15:02	1
Total Dissolved Solids (SM 2540C)	**86**		10	8.7	mg/L			01/26/23 20:53	1
Total Suspended Solids (SM 2540D)	**2.3**		1.0	0.83	mg/L			01/23/23 13:32	1
MBAS (SM 5540C)	ND		0.30	0.054	mg/L		01/21/23 15:20	01/21/23 16:41	1
Biochemical Oxygen Demand (SM5210B)	ND		2.0	1.0	mg/L			01/21/23 10:07	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	PHL6	TPHd14	TBP	2FP	NBZ
Lab Sample ID	Client Sample ID	(31-120)	(10-120)	(45-120)	(28-127)	(17-120)	(27-120)
570-124873-1	Outfall011_20230120_Comp	72	36	76	94	57	85
LCS 570-298062/2-A	Lab Control Sample	74	37	84	89	57	72
LCSD 570-298062/3-A	Lab Control Sample Dup	77	39	87	94	61	75
MB 570-298062/1-A	Method Blank	67	34	82	83	54	80

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX1	DCB1
Lab Sample ID	Client Sample ID	(20-139)	(20-154)
570-124873-1	Outfall011_20230120_Comp	34	31
LCS 570-297984/2-A	Lab Control Sample	101	110
LCSD 570-297984/3-A	Lab Control Sample Dup	92	96
MB 570-297984/1-A	Method Blank	70	86

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-298062/1-A
Matrix: Water
Analysis Batch: 300591

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 298062

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		01/24/23 08:32	02/02/23 14:02	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		01/24/23 08:32	02/02/23 14:02	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		01/24/23 08:32	02/02/23 14:02	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		01/24/23 08:32	02/02/23 14:02	1
Pentachlorophenol	ND		1.0	0.84	ug/L		01/24/23 08:32	02/02/23 14:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*67*		*31 - 120*	*01/24/23 08:32*	*02/02/23 14:02*	*1*
Phenol-d6 (Surr)	*34*		*10 - 120*	*01/24/23 08:32*	*02/02/23 14:02*	*1*
p-Terphenyl-d14 (Surr)	*82*		*45 - 120*	*01/24/23 08:32*	*02/02/23 14:02*	*1*
2,4,6-Tribromophenol	*83*		*28 - 127*	*01/24/23 08:32*	*02/02/23 14:02*	*1*
2-Fluorophenol	*54*		*17 - 120*	*01/24/23 08:32*	*02/02/23 14:02*	*1*
Nitrobenzene-d5	*80*		*27 - 120*	*01/24/23 08:32*	*02/02/23 14:02*	*1*

Lab Sample ID: LCS 570-298062/2-A
Matrix: Water
Analysis Batch: 300591

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 298062

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4,6-Trichlorophenol	20.0	18.2		ug/L		91	52 - 129
2,4-Dinitrotoluene	20.0	19.8		ug/L		99	48 - 127
Bis(2-ethylhexyl) phthalate	20.0	19.5		ug/L		97	29 - 137
N-Nitrosodimethylamine	20.0	11.8		ug/L		59	20 - 120
Pentachlorophenol	20.0	16.5		ug/L		83	38 - 152

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*74*		*31 - 120*
Phenol-d6 (Surr)	*37*		*10 - 120*
p-Terphenyl-d14 (Surr)	*84*		*45 - 120*
2,4,6-Tribromophenol	*89*		*28 - 127*
2-Fluorophenol	*57*		*17 - 120*
Nitrobenzene-d5	*72*		*27 - 120*

Lab Sample ID: LCSD 570-298062/3-A
Matrix: Water
Analysis Batch: 300591

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 298062

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4,6-Trichlorophenol	20.0	19.0		ug/L		95	52 - 129	5	35
2,4-Dinitrotoluene	20.0	20.3		ug/L		102	48 - 127	3	25
Bis(2-ethylhexyl) phthalate	20.0	20.2		ug/L		101	29 - 137	4	50
N-Nitrosodimethylamine	20.0	12.3		ug/L		62	20 - 120	5	21
Pentachlorophenol	20.0	18.1		ug/L		91	38 - 152	9	52

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*77*		*31 - 120*
Phenol-d6 (Surr)	*39*		*10 - 120*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-298062/3-A
Matrix: Water
Analysis Batch: 300591

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 298062

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
p-Terphenyl-d14 (Surr)	87		45 - 120
2,4,6-Tribromophenol	94		28 - 127
2-Fluorophenol	61		17 - 120
Nitrobenzene-d5	75		27 - 120

Method: 608.3 - Organochlorine Pesticides in Water

Lab Sample ID: MB 570-297984/1-A
Matrix: Water
Analysis Batch: 299101

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 297984

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		01/23/23 18:55	01/27/23 15:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	70		20 - 139	01/23/23 18:55	01/27/23 15:42	1
DCB Decachlorobiphenyl (Surr)	86		20 - 154	01/23/23 18:55	01/27/23 15:42	1

Lab Sample ID: LCS 570-297984/2-A
Matrix: Water
Analysis Batch: 299101

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 297984

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
alpha-BHC			0.0333	0.0307		ug/L		92	37 - 140		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	101		20 - 139
DCB Decachlorobiphenyl (Surr)	110		20 - 154

Lab Sample ID: LCSD 570-297984/3-A
Matrix: Water
Analysis Batch: 299101

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 297984

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
alpha-BHC			0.0333	0.0304		ug/L		91	37 - 140	1	36

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Tetrachloro-m-xylene	92		20 - 139
DCB Decachlorobiphenyl (Surr)	96		20 - 154

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-297602/5
Matrix: Water
Analysis Batch: 297602

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			01/21/23 09:01	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 570-297602/5
Matrix: Water
Analysis Batch: 297602

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.10	0.020	mg/L			01/21/23 09:01	1

Lab Sample ID: LCS 570-297602/6
Matrix: Water
Analysis Batch: 297602

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrite as N			2.50	2.48		mg/L		99	90 - 110		
Nitrate as N			5.00	5.00		mg/L		100	90 - 110		

Lab Sample ID: LCSD 570-297602/7
Matrix: Water
Analysis Batch: 297602

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N			2.50	2.52		mg/L		101	90 - 110	2	15
Nitrate as N			5.00	4.93		mg/L		99	90 - 110	1	15

Lab Sample ID: 570-124951-A-3 MS
Matrix: Water
Analysis Batch: 297602

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrite as N	2.2		2.50	4.08	LN	mg/L		76	80 - 120		
Nitrate as N	7.2		5.00	12.9	EY	mg/L		113	80 - 120		

Lab Sample ID: 570-124951-A-3 MSD
Matrix: Water
Analysis Batch: 297602

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.2		2.50	4.00	LN	mg/L		73	80 - 120	2	20
Nitrate as N	7.2		5.00	12.9	EY	mg/L		113	80 - 120	0	20

Lab Sample ID: MB 570-297603/5
Matrix: Water
Analysis Batch: 297603

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			01/21/23 09:01	1
Sulfate	ND		1.0	0.24	mg/L			01/21/23 09:01	1

Lab Sample ID: LCS 570-297603/6
Matrix: Water
Analysis Batch: 297603

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			50.0	50.6		mg/L		101	90 - 110		
Sulfate			50.0	50.4		mg/L		101	90 - 110		

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 570-297603/7
Matrix: Water
Analysis Batch: 297603

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			50.0	50.1		mg/L		100	90 - 110	1	15
Sulfate			50.0	50.2		mg/L		100	90 - 110	0	15

Lab Sample ID: 570-124951-A-3 MS
Matrix: Water
Analysis Batch: 297603

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	450	EY	50.0	498	EY BB	mg/L		104	80 - 120		
Sulfate	1000	EY	50.0	1090	EY BB	mg/L		88	80 - 120		

Lab Sample ID: 570-124951-A-3 MSD
Matrix: Water
Analysis Batch: 297603

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	450	EY	50.0	497	EY BB	mg/L		103	80 - 120	0	20
Sulfate	1000	EY	50.0	1090	EY BB	mg/L		85	80 - 120	0	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-298791/7
Matrix: Water
Analysis Batch: 298791

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/27/23 01:50	1

Lab Sample ID: LCS 570-298791/8
Matrix: Water
Analysis Batch: 298791

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	24.7		ug/L		99	85 - 115		

Lab Sample ID: LCSD 570-298791/9
Matrix: Water
Analysis Batch: 298791

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	25.4		ug/L		102	85 - 115	3	15

Lab Sample ID: 570-125345-D-2 MS
Matrix: Water
Analysis Batch: 298791

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	41		50.0	94.2		ug/L		107	80 - 120		

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: 570-125345-D-2 MSD
Matrix: Water
Analysis Batch: 298791

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	41		50.0	93.8		ug/L		106	80 - 120	0	15

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-298096/1-A
Matrix: Water
Analysis Batch: 298201

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 298096

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/24/23 09:53	01/24/23 13:19	1
Copper	ND		2.0	0.32	ug/L		01/24/23 09:53	01/24/23 13:19	1
Lead	0.142	J,DX	1.0	0.12	ug/L		01/24/23 09:53	01/24/23 13:19	1
Selenium	ND		2.0	0.52	ug/L		01/24/23 09:53	01/24/23 13:19	1
Iron	ND		20	3.7	ug/L		01/24/23 09:53	01/24/23 13:19	1
Arsenic	ND		1.0	0.16	ug/L		01/24/23 09:53	01/24/23 13:19	1
Zinc	ND		20	2.8	ug/L		01/24/23 09:53	01/24/23 13:19	1
Manganese	1.51		1.0	0.41	ug/L		01/24/23 09:53	01/24/23 13:19	1

Lab Sample ID: LCS 570-298096/2-A
Matrix: Water
Analysis Batch: 298201

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 298096

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	81.9		ug/L		102	85 - 115
Copper	80.0	79.1		ug/L		99	85 - 115
Lead	80.0	80.5		ug/L		101	85 - 115
Selenium	80.0	80.1		ug/L		100	85 - 115
Iron	800	839		ug/L		105	85 - 115
Arsenic	80.0	82.2		ug/L		103	85 - 115
Zinc	80.0	79.8		ug/L		100	85 - 115
Manganese	80.0	83.0		ug/L		104	85 - 115

Lab Sample ID: LCSD 570-298096/3-A
Matrix: Water
Analysis Batch: 298201

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 298096

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	80.8		ug/L		101	85 - 115	1	20
Copper	80.0	78.9		ug/L		99	85 - 115	0	20
Lead	80.0	81.6		ug/L		102	85 - 115	1	20
Selenium	80.0	77.8		ug/L		97	85 - 115	3	20
Iron	800	829		ug/L		104	85 - 115	1	20
Arsenic	80.0	81.1		ug/L		101	85 - 115	1	20
Zinc	80.0	79.8		ug/L		100	85 - 115	0	20
Manganese	80.0	82.9		ug/L		104	85 - 115	0	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-124890-D-1-C MS
Matrix: Water
Analysis Batch: 298201

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 298096

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND		80.0	81.0		ug/L		101	80 - 120
Copper	1.4	J,DX	80.0	80.8		ug/L		99	80 - 120
Lead	ND		80.0	81.5		ug/L		102	80 - 120
Selenium	ND		80.0	78.3		ug/L		98	80 - 120
Iron	21		800	849		ug/L		103	80 - 120
Arsenic	0.81	J,DX	80.0	82.4		ug/L		102	80 - 120
Zinc	ND		80.0	81.4		ug/L		102	80 - 120
Manganese	1.5	MB	80.0	102	LM	ug/L		125	80 - 120

Lab Sample ID: 570-124890-D-1-D MSD
Matrix: Water
Analysis Batch: 298201

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 298096

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND		80.0	82.1		ug/L		103	80 - 120	1	20
Copper	1.4	J,DX	80.0	82.9		ug/L		102	80 - 120	3	20
Lead	ND		80.0	82.5		ug/L		103	80 - 120	1	20
Selenium	ND		80.0	79.0		ug/L		99	80 - 120	1	20
Iron	21		800	878		ug/L		107	80 - 120	3	20
Arsenic	0.81	J,DX	80.0	84.0		ug/L		104	80 - 120	2	20
Zinc	ND		80.0	82.0		ug/L		102	80 - 120	1	20
Manganese	1.5	MB	80.0	85.8		ug/L		105	80 - 120	17	20

Lab Sample ID: MB 570-300272/1-A
Matrix: Water
Analysis Batch: 300368

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 300272

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		1.0	0.41	ug/L		02/01/23 11:07	02/01/23 14:05	1

Lab Sample ID: LCS 570-300272/2-A
Matrix: Water
Analysis Batch: 300368

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 300272

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Manganese	80.0	80.1		ug/L		100	85 - 115

Lab Sample ID: LCSD 570-300272/3-A
Matrix: Water
Analysis Batch: 300368

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 300272

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Manganese	80.0	81.9		ug/L		102	85 - 115	2	20

Lab Sample ID: 570-124873-1 MS
Matrix: Water
Analysis Batch: 300368

Client Sample ID: Outfall011_20230120_Comp
Prep Type: Total Recoverable
Prep Batch: 300272

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Manganese	5.1		80.0	84.9		ug/L		100	80 - 120

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: 570-124873-1 MSD
Matrix: Water
Analysis Batch: 300368

Client Sample ID: Outfall011_20230120_Comp
Prep Type: Total Recoverable
Prep Batch: 300272

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Manganese	5.1		80.0	87.6		ug/L		103	80 - 120	3	20

Lab Sample ID: MB 570-298550/1-A
Matrix: Water
Analysis Batch: 298597

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L			01/25/23 14:41	1
Copper	ND		2.0	0.32	ug/L			01/25/23 14:41	1
Lead	ND		1.0	0.12	ug/L			01/25/23 14:41	1
Selenium	ND		2.0	0.52	ug/L			01/25/23 14:41	1
Iron	ND		20	3.7	ug/L			01/25/23 14:41	1
Arsenic	ND		1.0	0.16	ug/L			01/25/23 14:41	1
Zinc	ND		20	2.8	ug/L			01/25/23 14:41	1
Manganese	ND		1.0	0.41	ug/L			01/25/23 14:41	1

Lab Sample ID: LCS 570-298550/2-A
Matrix: Water
Analysis Batch: 298597

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	77.8		ug/L		97	85 - 115
Copper	80.0	72.8		ug/L		91	85 - 115
Lead	80.0	78.4		ug/L		98	85 - 115
Selenium	80.0	77.7		ug/L		97	85 - 115
Iron	800	783		ug/L		98	85 - 115
Arsenic	80.0	80.7		ug/L		101	85 - 115
Zinc	80.0	74.9		ug/L		94	85 - 115
Manganese	80.0	78.8		ug/L		98	85 - 115

Lab Sample ID: LCSD 570-298550/3-A
Matrix: Water
Analysis Batch: 298597

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	77.6		ug/L		97	85 - 115	0	20
Copper	80.0	73.5		ug/L		92	85 - 115	1	20
Lead	80.0	78.0		ug/L		97	85 - 115	1	20
Selenium	80.0	74.9		ug/L		94	85 - 115	4	20
Iron	800	768		ug/L		96	85 - 115	2	20
Arsenic	80.0	80.2		ug/L		100	85 - 115	1	20
Zinc	80.0	75.4		ug/L		94	85 - 115	1	20
Manganese	80.0	78.5		ug/L		98	85 - 115	0	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-298289/1-A
Matrix: Water
Analysis Batch: 298644

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 298289

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		01/24/23 17:46	01/25/23 15:38	1

Lab Sample ID: LCS 570-298289/2-A
Matrix: Water
Analysis Batch: 298644

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 298289

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	8.65		ug/L		108	85 - 115

Lab Sample ID: LCSD 570-298289/3-A
Matrix: Water
Analysis Batch: 298644

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 298289

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	8.00	8.61		ug/L		108	85 - 115	0	10

Lab Sample ID: MB 570-298285/1-B
Matrix: Water
Analysis Batch: 298644

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 298287

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		01/24/23 18:15	01/25/23 15:14	1

Lab Sample ID: LCS 570-298285/2-B
Matrix: Water
Analysis Batch: 298644

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 298287

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	8.38		ug/L		105	85 - 115

Lab Sample ID: LCSD 570-298285/3-B
Matrix: Water
Analysis Batch: 298644

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 298287

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	8.00	8.19		ug/L		102	85 - 115	2	10

Lab Sample ID: 570-124873-3 MS
Matrix: Water
Analysis Batch: 298644

Client Sample ID: Outfall011_20230120_Comp_F
Prep Type: Dissolved
Prep Batch: 298287

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND	BU	8.00	8.36		ug/L		105	85 - 115

Lab Sample ID: 570-124873-3 MSD
Matrix: Water
Analysis Batch: 298644

Client Sample ID: Outfall011_20230120_Comp_F
Prep Type: Dissolved
Prep Batch: 298287

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND	BU	8.00	8.47		ug/L		106	85 - 115	1	10

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: 570-124653-L-2-D MS
Matrix: Water
Analysis Batch: 298644

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 298289

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		8.00	8.55		ug/L		107	85 - 115

Lab Sample ID: 570-124653-L-2-E MSD
Matrix: Water
Analysis Batch: 298644

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 298289

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		8.00	8.52	IB	ug/L		106	85 - 115	0	10

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-299646/5-A
Matrix: Water
Analysis Batch: 299684

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 299646

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		01/30/23 12:27	01/30/23 13:57	1

Lab Sample ID: LCS 570-299646/6-A
Matrix: Water
Analysis Batch: 299684

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 299646

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	0.500	0.475		mg/L		95	90 - 110

Lab Sample ID: LCSD 570-299646/7-A
Matrix: Water
Analysis Batch: 299684

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 299646

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	0.500	0.482		mg/L		96	90 - 110	1	20

Lab Sample ID: 570-124924-X-1-A MS
Matrix: Water
Analysis Batch: 299684

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 299646

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	ND		0.500	0.495		mg/L		99	90 - 110

Lab Sample ID: 570-124924-X-1-B MSD
Matrix: Water
Analysis Batch: 299684

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 299646

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	ND		0.500	0.493		mg/L		99	90 - 110	1	25

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-297946/11
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			01/23/23 13:11	1

Lab Sample ID: LCS 570-297946/14
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	267		ug/L		107	90 - 110

Lab Sample ID: LCSD 570-297946/13
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	250	248		ug/L		99	90 - 110	7	20

Lab Sample ID: MRL 570-297946/10
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	4.66	J,DX	ug/L		93	50 - 150

Lab Sample ID: 570-124243-S-1 MS
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	ND		250	216		ug/L		86	70 - 130

Lab Sample ID: 570-124243-S-1 MSD
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	ND		250	227		ug/L		91	70 - 130	5	30

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-297650/1
Matrix: Water
Analysis Batch: 297650

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	1000	1000		NTU		101.0	99.0 - 101.0

Method: SM 2130B - Turbidity (Continued)

Lab Sample ID: LCSSRM 570-297650/2
Matrix: Water
Analysis Batch: 297650

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			10.0	10		NTU		101.0	99.0 - 101.0		

Lab Sample ID: LCSSRM 570-297650/3
Matrix: Water
Analysis Batch: 297650

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			0.0200	ND		NTU		100.0	0.0 - 200.0		

Lab Sample ID: 570-124868-E-1 DU
Matrix: Water
Analysis Batch: 297650

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Turbidity	9.0			9.0		NTU				0.1	25

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-298987/1
Matrix: Water
Analysis Batch: 298987

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			01/26/23 20:53	1

Lab Sample ID: LCS 570-298987/2
Matrix: Water
Analysis Batch: 298987

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			1000	1050		mg/L		105	84 - 108		

Lab Sample ID: LCSD 570-298987/3
Matrix: Water
Analysis Batch: 298987

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids			1000	1040		mg/L		104	84 - 108	1	10

Lab Sample ID: 570-124866-B-1 DU
Matrix: Water
Analysis Batch: 298987

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	2200			2250		mg/L				2	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-297872/1
Matrix: Water
Analysis Batch: 297872

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/23/23 13:32	1

Lab Sample ID: LCS 570-297872/2
Matrix: Water
Analysis Batch: 297872

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	86.0		mg/L		86	77 - 116

Lab Sample ID: LCSD 570-297872/3
Matrix: Water
Analysis Batch: 297872

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	82.0		mg/L		82	77 - 116	5	10

Lab Sample ID: 570-124881-A-2 DU
Matrix: Water
Analysis Batch: 297872

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	11		13.2		mg/L		16	10

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-297652/5-A
Matrix: Water
Analysis Batch: 297651

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 297652

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.30	0.054	mg/L		01/21/23 15:20	01/21/23 16:36	1

Lab Sample ID: LCS 570-297652/6-A
Matrix: Water
Analysis Batch: 297651

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 297652

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
MBAS	1.00	1.06		mg/L		106	85 - 111

Lab Sample ID: LCSD 570-297652/7-A
Matrix: Water
Analysis Batch: 297651

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 297652

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS	1.00	1.06		mg/L		106	85 - 111	0	7

Method: SM 5540C - Methylene Blue Active Substances (MBAS) (Continued)

Lab Sample ID: 570-124873-1 MS — **Client Sample ID: Outfall011_20230120_Comp**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 297651 — **Prep Batch: 297652**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
MBAS	ND		1.00	1.16		mg/L		116	75 - 125

Lab Sample ID: 570-124873-1 MSD — **Client Sample ID: Outfall011_20230120_Comp**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 297651 — **Prep Batch: 297652**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS	ND		1.00	1.15		mg/L		115	75 - 125	1	12

Method: SM5210B - BOD, 5 Day

Lab Sample ID: USB 570-298979/2 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 298979

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L			01/21/23 09:22	1

Lab Sample ID: LCS 570-298979/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 298979

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	199	218		mg/L		110	84.6 - 115.4

Lab Sample ID: 570-124873-1 DU — **Client Sample ID: Outfall011_20230120_Comp**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 298979

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Biochemical Oxygen Demand	ND		ND		mg/L		NC	25

GC/MS Semi VOA

Prep Batch: 298062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	625	
MB 570-298062/1-A	Method Blank	Total/NA	Water	625	
LCS 570-298062/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-298062/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 300591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	625.1 SIM	298062
MB 570-298062/1-A	Method Blank	Total/NA	Water	625.1 SIM	298062
LCS 570-298062/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	298062
LCSD 570-298062/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	298062

GC Semi VOA

Prep Batch: 297984

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	608	
MB 570-297984/1-A	Method Blank	Total/NA	Water	608	
LCS 570-297984/2-A	Lab Control Sample	Total/NA	Water	608	
LCSD 570-297984/3-A	Lab Control Sample Dup	Total/NA	Water	608	

Analysis Batch: 299101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-297984/1-A	Method Blank	Total/NA	Water	608.3	297984
LCS 570-297984/2-A	Lab Control Sample	Total/NA	Water	608.3	297984
LCSD 570-297984/3-A	Lab Control Sample Dup	Total/NA	Water	608.3	297984

Analysis Batch: 299773

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	608.3	297984

HPLC/IC

Analysis Batch: 297602

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	300.0	
MB 570-297602/5	Method Blank	Total/NA	Water	300.0	
LCS 570-297602/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-297602/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-124951-A-3 MS	Matrix Spike	Total/NA	Water	300.0	
570-124951-A-3 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 297603

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	300.0	
MB 570-297603/5	Method Blank	Total/NA	Water	300.0	
LCS 570-297603/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-297603/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-124951-A-3 MS	Matrix Spike	Total/NA	Water	300.0	
570-124951-A-3 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

HPLC/IC

Analysis Batch: 298163

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	NO2NO3 Calc	

Analysis Batch: 298791

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	314.0	
MB 570-298791/7	Method Blank	Total/NA	Water	314.0	
LCS 570-298791/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-298791/9	Lab Control Sample Dup	Total/NA	Water	314.0	
570-125345-D-2 MS	Matrix Spike	Total/NA	Water	314.0	
570-125345-D-2 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Metals

Prep Batch: 298096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total Recoverable	Water	200.8	
MB 570-298096/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-298096/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-298096/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-124890-D-1-C MS	Matrix Spike	Total Recoverable	Water	200.8	
570-124890-D-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	

Analysis Batch: 298201

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-298096/1-A	Method Blank	Total Recoverable	Water	200.8	298096
LCS 570-298096/2-A	Lab Control Sample	Total Recoverable	Water	200.8	298096
LCSD 570-298096/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	298096
570-124890-D-1-C MS	Matrix Spike	Total Recoverable	Water	200.8	298096
570-124890-D-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	298096

Analysis Batch: 298215

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total Recoverable	Water	200.8	298096

Filtration Batch: 298285

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-3	Outfall011_20230120_Comp_F	Dissolved	Water	Filtration	
MB 570-298285/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-298285/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-298285/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-124873-3 MS	Outfall011_20230120_Comp_F	Dissolved	Water	Filtration	
570-124873-3 MSD	Outfall011_20230120_Comp_F	Dissolved	Water	Filtration	

Prep Batch: 298287

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-3	Outfall011_20230120_Comp_F	Dissolved	Water	245.1	298285
MB 570-298285/1-B	Method Blank	Dissolved	Water	245.1	298285
LCS 570-298285/2-B	Lab Control Sample	Dissolved	Water	245.1	298285
LCSD 570-298285/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	298285
570-124873-3 MS	Outfall011_20230120_Comp_F	Dissolved	Water	245.1	298285
570-124873-3 MSD	Outfall011_20230120_Comp_F	Dissolved	Water	245.1	298285

Metals

Prep Batch: 298289

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	245.1	
MB 570-298289/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-298289/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-298289/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
570-124653-L-2-D MS	Matrix Spike	Dissolved	Water	245.1	
570-124653-L-2-E MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	

Filtration Batch: 298550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-3	Outfall011_20230120_Comp_F	Dissolved	Water	Filtration	
MB 570-298550/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-298550/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-298550/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 298596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-3	Outfall011_20230120_Comp_F	Dissolved	Water	200.8	298550

Analysis Batch: 298597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-298550/1-A	Method Blank	Dissolved	Water	200.8	298550
LCS 570-298550/2-A	Lab Control Sample	Dissolved	Water	200.8	298550
LCSD 570-298550/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	298550

Analysis Batch: 298644

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	245.1	298289
570-124873-3	Outfall011_20230120_Comp_F	Dissolved	Water	245.1	298287
MB 570-298285/1-B	Method Blank	Dissolved	Water	245.1	298287
MB 570-298289/1-A	Method Blank	Total/NA	Water	245.1	298289
LCS 570-298285/2-B	Lab Control Sample	Dissolved	Water	245.1	298287
LCS 570-298289/2-A	Lab Control Sample	Total/NA	Water	245.1	298289
LCSD 570-298285/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	298287
LCSD 570-298289/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	298289
570-124653-L-2-D MS	Matrix Spike	Dissolved	Water	245.1	298289
570-124653-L-2-E MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	298289
570-124873-3 MS	Outfall011_20230120_Comp_F	Dissolved	Water	245.1	298287
570-124873-3 MSD	Outfall011_20230120_Comp_F	Dissolved	Water	245.1	298287

Prep Batch: 300272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total Recoverable	Water	200.8	
MB 570-300272/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-300272/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-300272/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-124873-1 MS	Outfall011_20230120_Comp	Total Recoverable	Water	200.8	
570-124873-1 MSD	Outfall011_20230120_Comp	Total Recoverable	Water	200.8	

Analysis Batch: 300368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total Recoverable	Water	200.8	300272

Metals (Continued)

Analysis Batch: 300368 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-300272/1-A	Method Blank	Total Recoverable	Water	200.8	300272
LCS 570-300272/2-A	Lab Control Sample	Total Recoverable	Water	200.8	300272
LCSD 570-300272/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	300272
570-124873-1 MS	Outfall011_20230120_Comp	Total Recoverable	Water	200.8	300272
570-124873-1 MSD	Outfall011_20230120_Comp	Total Recoverable	Water	200.8	300272

General Chemistry

Analysis Batch: 297650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	SM 2130B	
LCSSRM 570-297650/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-297650/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-297650/3	Lab Control Sample	Total/NA	Water	SM 2130B	
570-124868-E-1 DU	Duplicate	Total/NA	Water	SM 2130B	

Analysis Batch: 297651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	SM 5540C	297652
MB 570-297652/5-A	Method Blank	Total/NA	Water	SM 5540C	297652
LCS 570-297652/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	297652
LCSD 570-297652/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	297652
570-124873-1 MS	Outfall011_20230120_Comp	Total/NA	Water	SM 5540C	297652
570-124873-1 MSD	Outfall011_20230120_Comp	Total/NA	Water	SM 5540C	297652

Prep Batch: 297652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	SM 5540C	
MB 570-297652/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-297652/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-297652/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	
570-124873-1 MS	Outfall011_20230120_Comp	Total/NA	Water	SM 5540C	
570-124873-1 MSD	Outfall011_20230120_Comp	Total/NA	Water	SM 5540C	

Analysis Batch: 297872

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	SM 2540D	
MB 570-297872/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-297872/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-297872/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-124881-A-2 DU	Duplicate	Total/NA	Water	SM 2540D	

Analysis Batch: 297946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	Kelada 01	
MB 570-297946/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-297946/14	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-297946/13	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-297946/10	Lab Control Sample	Total/NA	Water	Kelada 01	
570-124243-S-1 MS	Matrix Spike	Total/NA	Water	Kelada 01	
570-124243-S-1 MSD	Matrix Spike Duplicate	Total/NA	Water	Kelada 01	

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

General Chemistry

Analysis Batch: 298979

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	SM5210B	
USB 570-298979/2	Method Blank	Total/NA	Water	SM5210B	
LCS 570-298979/4	Lab Control Sample	Total/NA	Water	SM5210B	
570-124873-1 DU	Outfall011_20230120_Comp	Total/NA	Water	SM5210B	

Analysis Batch: 298987

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	SM 2540C	
MB 570-298987/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-298987/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-298987/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
570-124866-B-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Prep Batch: 299646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	Distill/Ammonia	
MB 570-299646/5-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-299646/6-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-299646/7-A	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	
570-124924-X-1-A MS	Matrix Spike	Total/NA	Water	Distill/Ammonia	
570-124924-X-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 299684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	350.1	299646
MB 570-299646/5-A	Method Blank	Total/NA	Water	350.1	299646
LCS 570-299646/6-A	Lab Control Sample	Total/NA	Water	350.1	299646
LCSD 570-299646/7-A	Lab Control Sample Dup	Total/NA	Water	350.1	299646
570-124924-X-1-A MS	Matrix Spike	Total/NA	Water	350.1	299646
570-124924-X-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	299646

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Client Sample ID: Outfall011_20230120_Comp
Lab Sample ID: 570-124873-1
Date Collected: 01/20/23 11:20
Matrix: Water
Date Received: 01/20/23 18:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			1046.4 mL	2 mL	298062	01/24/23 08:32	OAJ3	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	300591	02/02/23 20:06	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Prep	608			1500 mL	1 mL	297984	01/23/23 18:56	USUL	EET CAL 4
Total/NA	Analysis	608.3		1	1 mL	1 mL	299773	01/31/23 15:23	N5Y3	EET CAL 4
	Instrument ID: GC52A									
Total/NA	Analysis	300.0		1	4 mL	4 mL	297602	01/21/23 11:33	PS	EET CAL 4
	Instrument ID: IC7									
Total/NA	Analysis	300.0		1	4 mL	4 mL	297603	01/21/23 11:33	PS	EET CAL 4
	Instrument ID: IC7									
Total/NA	Analysis	314.0		1	4 mL	4 mL	298791	01/27/23 04:02	PS	EET CAL 4
	Instrument ID: IC13									
Total/NA	Analysis	NO2NO3 Calc		1			298163	01/24/23 12:20	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total Recoverable	Prep	200.8			50 mL	50 mL	298096	01/24/23 09:53	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			298215	01/24/23 14:22	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	300272	02/01/23 11:07	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			300368	02/01/23 14:12	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Prep	245.1			25 mL	50 mL	298289	01/24/23 17:46	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			298644	01/25/23 15:54	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	299646	01/30/23 12:27	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	299684	01/30/23 14:33	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	297946	01/23/23 15:05	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			297650	01/21/23 15:02	ZVB7	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	298987	01/26/23 20:53	ZL7L	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	297872	01/23/23 13:32	UWCT	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Prep	SM 5540C			100 mL	100 mL	297652	01/21/23 15:20	ZVB7	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	297651	01/21/23 16:41	ZVB7	EET CAL 4
	Instrument ID: UV9									
Total/NA	Analysis	SM5210B		1			298979	01/21/23 10:07	U7UR	EET CAL 4
	Instrument ID: BOD3									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Client Sample ID: Outfall011_20230120_Comp_F
Lab Sample ID: 570-124873-3

Date Collected: 01/20/23 11:20
Matrix: Water
Date Received: 01/20/23 18:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	298550	01/25/23 13:28	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			298596	01/25/23 14:41	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	298285	01/24/23 17:42	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	298287	01/24/23 18:15	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			298644	01/25/23 15:20	C0YH	EET CAL 4
	Instrument ID: HG8									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method	Method Description	Protocol	Laboratory
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
608.3	Organochlorine Pesticides in Water	40CFR136A	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
SM5210B	BOD, 5 Day	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
608	Liquid-Liquid Extraction (Separatory Funnel)	40CFR136A	EET CAL 4
625	Liquid-Liquid Extraction	40CFR136A	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-1
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124873-1	Outfall011_20230120_Comp	Water	01/20/23 11:20	01/20/23 18:30
570-124873-3	Outfall011_20230120_Comp_F	Water	01/20/23 11:20	01/20/23 18:30

Eurofins Calscience Irvine

570-124873 Chain of Custody

CHAIN OF CUSTODY FORM

124873

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

									R	R	R	R	R	R	R	R	R	R	R	C		
									ANALYSIS REQUIRED													
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals. (E200.7): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl- SO_4, Nitrate-N Nitrite-N NO3+NO2-N Perchlorate (E300)	Turbidity TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals. Mercury (E245.1)	Total Recoverable Metals. (E200.7) As, Mn Fe			Comments
Outfall 011	Outfall011_20230120_Comp	1/20/2023 1120	WM	500 mL Poly	1	HNO_3	90	No	X										X	X			Outfall 011 analyze for As, Mn and Fe.
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	1L Poly	1	None	115	No			X												
			WM	500 mL Poly	2	None	120	No				X											
			WM	500 mL Poly	2	None	130	No					X										48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X									48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X							
			WM	1 L Glass Amber	2	None	170	No									X						
			WM	1 L Glass Amber	2	None	180	No										X					
			WM	1L Poly	1	None	185	No							X								
	Outfall011_20230120_Comp_Extra	1/20/2023 1120	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	500 mL Poly	2	None	120	No				H											Hold
			WM	500 mL Poly	2	None	130	No					H										Hold
			WM	1 L Glass Amber	2	None	170	No									H						Hold
			WM	1 L Glass Amber	2	None	180	No										H					Hold

Legend. C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-20-2023/1310	H&A	[signature]	1/20/23 1310 EC
[signature]	1/20/23 1830	EC	[signature]	1/20/23 1836

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: ___X___

2.1/2.1 1.7/1.7 1.5/1.5 Sc II

2/16/2023

2019-2020 Rainy Season
Version 4

CHAIN OF CUSTODY FORM

Client Name/Address.
Haley & Aldrich
5333 Mission Center Rd Suite 300
San Diego, CA 92108

Eurofins Calscience Irvine Contact: Christian Bondoc
17461 Derian Ave Suite #100
Irvine CA 92614
Tel 949-260-3218

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Sampler: Adrian Mobeka

Project:
Boeing-SSFL NPDES
Permit 2023
Routine Outfall [001, 002, 011, 018]
Outfall 011
Comp

Project Manager: Katherine Miller
520.289.8606, 520.904.6944 (cell)
Field Manager: Mark Dominick
978.234.5033, 818.599.0702 (cell)

ANALYSIS REQUIRED

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R: Total Dissolved Metals (E200.7) Zn (E200.8) Cu, Pb, Cd, Se	R: Cyanide (SM4500-CN-E / E335.2)	R: Gross Alpha(E900.0), Gross Beta(E900.0) Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901 0 or E901 1)	R: Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA	R: Total Dissolved Metals: Mercury (E245.1)	C: Total Dissolved Metals. (E200.7): As, Mn, Fe						Comments
Outfall 011	Outfall011_20230120_Comp_F	1/20/2023 / 1120	WM	1L Poly	1	None	200	No	X					X						Filter and preserve w/in 24hrs of receipt at lab. Outfall 011 analyze for As, Mn and Fe.
			WM	borosilicate vials	1	None	320	No					X							Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall011_20230120_Comp	1/20/2023 / 1120	WM	500 mL Poly	1	NaOH	220	No		X										
			WM	2.5 Gal Cube	1	None	225	No			X									Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No												
			~~WM~~	~~1 Gal Cube~~	~~6~~	~~None~~	~~235~~	~~No~~				~~X~~								~~Only test if first or second rain events of the year. Deliver to ABC Labs in Ventura, CA.~~

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company	Received By	Date/Time:
[signature]	1-20-2023/1310	H,A	[signature]	1/20/23 1310 EC
[signature]	1/20/23 1830	EC	[signature]	1/20/23 1830

Turn-around time: (Check)
24 Hour: ______ 72 Hour: ______ 10 Day: __X____
48 Hour: ______ 5 Day: ______ Normal: ______

Sample Integrity: (Check)
Intact: ______ On Ice: ______

Store samples for 6 months.
Data Requirements. (Check)
No Level IV: ______ All Level IV: __X____

~~2.5/2.5~~ ~~5cH~~ vm

2019-2020 Rainy Season
Version 4

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No: 570-204882 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-124873-3
Address: 13715 Rider Trail North, ,	Due Date Requested: 2/24/2023			
City: Earth City	TAT Requested (days)			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 001 - COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Evaporation Gross Alpha/Beta	903.0/PreoSep_21 Radium-226	904.0/PreoSep_0 Radium-228	905_Sr90/PreoSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X								X	
Outfall011_20230120_Comp (570-124873-1)	1/20/23	11 20 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/23/23 1355				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

2/16/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel, Virendra	Carrier Tracking No(s).	COC No. 570-204885 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-124873-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 2/9/2023			
City: West Sacramento	TAT Requested (days)			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 001 - COMP	Project #: 44024446			
Site:	SSOW#:			

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall011_20230120_Comp (570-124873-1)	1/20/23	11 20 Pacific		Water			X		2	See QAS, Boeing_w/u to zero ug/L, Use Boeing glassware.
Outfall011_20230120_Comp_Extra (570-124873-2)	1/20/23	11 20 Pacific		Water				X	2	See QAS, Boeing_w/u to zero ug/L, Use Boeing glassware.

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/23/23 1412				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

2/16/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124873-1

Login Number: 124873
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/14/2023 6:29:22 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 011 - COMP

JOB NUMBER

570-124873-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

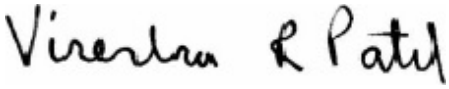
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-124873-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124873-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124873-2

Comments
No additional comments.

Receipt
The samples were received on 1/20/2023 6:30 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.5º C, 1.7º C and 2.1º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: Outfall011_20230120_Comp (570-124873-1) and (CCV 320-652668/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Client Sample ID: Outfall011_20230120_Comp
Lab Sample ID: 570-124873-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	0.0000022	J,DX MB	0.000048	0.00000022	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.00000085	J,DX MB	0.000048	0.00000022	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.00000048	J,DX MB	0.000048	0.00000019	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.00000041	J,DX MB q	0.000048	0.00000019	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.00000053	J,DX MB	0.000048	0.00000017	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000019	J,DX MB	0.000048	0.00000085	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000040	J,DX MB	0.000048	0.00000030	ug/L	1		1613B	Total/NA
OCDD	0.00050	MB	0.000096	0.0000031	ug/L	1		1613B	Total/NA
OCDF	0.000021	J,DX MB	0.000096	0.00000036	ug/L	1		1613B	Total/NA
Total TCDF	0.00000050	J,DX	0.0000096	0.00000016	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000055	J,DX MB q	0.000048	0.00000019	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000019	J,DX MB q	0.000048	0.00000015	ug/L	1		1613B	Total/NA
Total HpCDD	0.000038	J,DX MB	0.000048	0.00000085	ug/L	1		1613B	Total/NA
Total HpCDF	0.000012	J,DX MB	0.000048	0.00000030	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: Outfall011_20230120_Comp
Lab Sample ID: 570-124873-1
Date Collected: 01/20/23 11:20
Matrix: Water
Date Received: 01/20/23 18:30

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000096	0.00000055	ug/L		02/03/23 10:06	02/07/23 20:05	1
1,2,3,7,8-PeCDD	ND		0.000048	0.00000027	ug/L		02/03/23 10:06	02/07/23 20:05	1
1,2,3,7,8-PeCDF	ND		0.000048	0.00000016	ug/L		02/03/23 10:06	02/07/23 20:05	1
2,3,4,7,8-PeCDF	ND		0.000048	0.00000019	ug/L		02/03/23 10:06	02/07/23 20:05	1
1,2,3,4,7,8-HxCDD	**0.0000022**	**J,DX MB**	0.000048	0.00000022	ug/L		02/03/23 10:06	02/07/23 20:05	1
1,2,3,6,7,8-HxCDD	**0.00000085**	**J,DX MB**	0.000048	0.00000022	ug/L		02/03/23 10:06	02/07/23 20:05	1
1,2,3,7,8,9-HxCDD	**0.00000048**	**J,DX MB**	0.000048	0.00000019	ug/L		02/03/23 10:06	02/07/23 20:05	1
1,2,3,4,7,8-HxCDF	**0.00000041**	**J,DX MB q**	0.000048	0.00000019	ug/L		02/03/23 10:06	02/07/23 20:05	1
1,2,3,6,7,8-HxCDF	ND		0.000048	0.00000016	ug/L		02/03/23 10:06	02/07/23 20:05	1
1,2,3,7,8,9-HxCDF	**0.00000053**	**J,DX MB**	0.000048	0.00000017	ug/L		02/03/23 10:06	02/07/23 20:05	1
2,3,4,6,7,8-HxCDF	ND		0.000048	0.00000015	ug/L		02/03/23 10:06	02/07/23 20:05	1
1,2,3,4,6,7,8-HpCDD	**0.000019**	**J,DX MB**	0.000048	0.00000085	ug/L		02/03/23 10:06	02/07/23 20:05	1
1,2,3,4,6,7,8-HpCDF	**0.0000040**	**J,DX MB**	0.000048	0.00000030	ug/L		02/03/23 10:06	02/07/23 20:05	1
1,2,3,4,7,8,9-HpCDF	ND		0.000048	0.00000032	ug/L		02/03/23 10:06	02/07/23 20:05	1
OCDD	**0.00050**	**MB**	0.000096	0.0000031	ug/L		02/03/23 10:06	02/07/23 20:05	1
OCDF	**0.000021**	**J,DX MB**	0.000096	0.00000036	ug/L		02/03/23 10:06	02/07/23 20:05	1
Total TCDD	ND		0.0000096	0.00000055	ug/L		02/03/23 10:06	02/07/23 20:05	1
Total TCDF	**0.00000050**	**J,DX**	0.0000096	0.00000016	ug/L		02/03/23 10:06	02/07/23 20:05	1
Total PeCDD	ND		0.000048	0.00000027	ug/L		02/03/23 10:06	02/07/23 20:05	1
Total PeCDF	ND		0.000048	0.00000016	ug/L		02/03/23 10:06	02/07/23 20:05	1
Total HxCDD	**0.0000055**	**J,DX MB q**	0.000048	0.00000019	ug/L		02/03/23 10:06	02/07/23 20:05	1
Total HxCDF	**0.0000019**	**J,DX MB q**	0.000048	0.00000015	ug/L		02/03/23 10:06	02/07/23 20:05	1
Total HpCDD	**0.000038**	**J,DX MB**	0.000048	0.00000085	ug/L		02/03/23 10:06	02/07/23 20:05	1
Total HpCDF	**0.000012**	**J,DX MB**	0.000048	0.00000030	ug/L		02/03/23 10:06	02/07/23 20:05	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*77*		*25 - 164*	*02/03/23 10:06*	*02/07/23 20:05*	*1*
13C-2,3,7,8-TCDF	*76*		*24 - 169*	*02/03/23 10:06*	*02/07/23 20:05*	*1*
13C-1,2,3,7,8-PeCDD	*80*		*25 - 181*	*02/03/23 10:06*	*02/07/23 20:05*	*1*
13C-1,2,3,7,8-PeCDF	*80*		*24 - 185*	*02/03/23 10:06*	*02/07/23 20:05*	*1*
13C-2,3,4,7,8-PeCDF	*76*		*21 - 178*	*02/03/23 10:06*	*02/07/23 20:05*	*1*
13C-1,2,3,4,7,8-HxCDD	*76*		*32 - 141*	*02/03/23 10:06*	*02/07/23 20:05*	*1*
13C-1,2,3,6,7,8-HxCDD	*82*		*28 - 130*	*02/03/23 10:06*	*02/07/23 20:05*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: Outfall011_20230120_Comp **Lab Sample ID: 570-124873-1**
Date Collected: 01/20/23 11:20 **Matrix: Water**
Date Received: 01/20/23 18:30

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,7,8-HxCDF	70		26 - 152	02/03/23 10:06	02/07/23 20:05	1
13C-1,2,3,6,7,8-HxCDF	83		26 - 123	02/03/23 10:06	02/07/23 20:05	1
13C-1,2,3,7,8,9-HxCDF	85		29 - 147	02/03/23 10:06	02/07/23 20:05	1
13C-2,3,4,6,7,8-HxCDF	86		28 - 136	02/03/23 10:06	02/07/23 20:05	1
13C-1,2,3,4,6,7,8-HpCDD	80		23 - 140	02/03/23 10:06	02/07/23 20:05	1
13C-1,2,3,4,6,7,8-HpCDF	74		28 - 143	02/03/23 10:06	02/07/23 20:05	1
13C-1,2,3,4,7,8,9-HpCDF	79		26 - 138	02/03/23 10:06	02/07/23 20:05	1
13C-OCDD	80		17 - 157	02/03/23 10:06	02/07/23 20:05	1
13C-OCDF	79		17 - 157	02/03/23 10:06	02/07/23 20:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	89		35 - 197	02/03/23 10:06	02/07/23 20:05	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: Outfall011_20230120_Comp
Date Collected: 01/20/23 11:20
Date Received: 01/20/23 18:30

Lab Sample ID: 570-124873-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.0000096	0.00000052	ug/L		02/03/23 10:06	02/09/23 15:07	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*64*		*24 - 169*	*02/03/23 10:06*	*02/09/23 15:07*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*91*		*35 - 197*	*02/03/23 10:06*	*02/09/23 15:07*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	37TCDD (35-197)							
570-124873-1	Outfall011_20230120_Comp	89							
570-124873-1 - RA	Outfall011_20230120_Comp	91							
MB 320-651610/1-A	Method Blank	91							

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	37TCDD (31-191)							
LCS 320-651610/2-A	Lab Control Sample	89							
LCSD 320-651610/3-A	Lab Control Sample Dup	91							

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc. Job ID: 570-124873-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-124873-1	Outfall011_20230120_Comp	77	76	80	80	76	76	82	70
570-124873-1 - RA	Outfall011_20230120_Comp		64						
MB 320-651610/1-A	Method Blank	71	69	72	72	65	65	69	58

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-124873-1	Outfall011_20230120_Comp	83	85	86	80	74	79	80	79
570-124873-1 - RA	Outfall011_20230120_Comp								
MB 320-651610/1-A	Method Blank	70	78	78	71	64	72	71	70

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-651610/2-A	Lab Control Sample	67	66	70	69	68	67	72	62
LCSD 320-651610/3-A	Lab Control Sample Dup	71	69	74	73	69	65	74	62

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-651610/2-A	Lab Control Sample	71	75	74	69	66	70	71	70
LCSD 320-651610/3-A	Lab Control Sample Dup	73	78	78	73	67	74	76	74

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-651610/1-A
Matrix: Water
Analysis Batch: 652417

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651610

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.0000011	ug/L		02/03/23 10:06	02/07/23 14:39	1
2,3,7,8-TCDF	ND		0.000010	0.00000026	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000047	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,7,8-PeCDF	0.000000524	J,DX	0.000050	0.00000024	ug/L		02/03/23 10:06	02/07/23 14:39	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000029	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,4,7,8-HxCDD	0.00000235	J,DX	0.000050	0.00000035	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,6,7,8-HxCDD	0.000000472	J,DX	0.000050	0.00000034	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,7,8,9-HxCDD	0.000000555	J,DX q	0.000050	0.00000031	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,4,7,8-HxCDF	0.000000363	J,DX q	0.000050	0.00000022	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,6,7,8-HxCDF	0.000000299	J,DX q	0.000050	0.00000020	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,7,8,9-HxCDF	0.000000640	J,DX	0.000050	0.00000019	ug/L		02/03/23 10:06	02/07/23 14:39	1
2,3,4,6,7,8-HxCDF	0.000000315	J,DX q	0.000050	0.00000017	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,4,6,7,8-HpCDD	0.00000160	J,DX	0.000050	0.00000018	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,4,6,7,8-HpCDF	0.00000125	J,DX q	0.000050	0.00000023	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,4,7,8,9-HpCDF	0.000000762	J,DX	0.000050	0.00000024	ug/L		02/03/23 10:06	02/07/23 14:39	1
OCDD	0.00000491	J,DX	0.00010	0.00000033	ug/L		02/03/23 10:06	02/07/23 14:39	1
OCDF	0.00000107	J,DX q	0.00010	0.00000052	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total TCDD	ND		0.000010	0.0000011	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total TCDF	ND		0.000010	0.00000026	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total PeCDD	ND		0.000050	0.00000047	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total PeCDF	0.000000524	J,DX	0.000050	0.00000024	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total HxCDD	0.00000337	J,DX q	0.000050	0.00000031	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total HxCDF	0.00000162	J,DX q	0.000050	0.00000017	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total HpCDD	0.00000368	J,DX	0.000050	0.00000018	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total HpCDF	0.00000201	J,DX q	0.000050	0.00000023	ug/L		02/03/23 10:06	02/07/23 14:39	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*71*		*25 - 164*	*02/03/23 10:06*	*02/07/23 14:39*	*1*
13C-2,3,7,8-TCDF	*69*		*24 - 169*	*02/03/23 10:06*	*02/07/23 14:39*	*1*
13C-1,2,3,7,8-PeCDD	*72*		*25 - 181*	*02/03/23 10:06*	*02/07/23 14:39*	*1*
13C-1,2,3,7,8-PeCDF	*72*		*24 - 185*	*02/03/23 10:06*	*02/07/23 14:39*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-651610/1-A
Matrix: Water
Analysis Batch: 652417

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651610

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	65		21 - 178	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,4,7,8-HxCDD	65		32 - 141	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,6,7,8-HxCDD	69		28 - 130	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,4,7,8-HxCDF	58		26 - 152	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,6,7,8-HxCDF	70		26 - 123	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,7,8,9-HxCDF	78		29 - 147	02/03/23 10:06	02/07/23 14:39	1
13C-2,3,4,6,7,8-HxCDF	78		28 - 136	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,4,6,7,8-HpCDD	71		23 - 140	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,4,6,7,8-HpCDF	64		28 - 143	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,4,7,8,9-HpCDF	72		26 - 138	02/03/23 10:06	02/07/23 14:39	1
13C-OCDD	71		17 - 157	02/03/23 10:06	02/07/23 14:39	1
13C-OCDF	70		17 - 157	02/03/23 10:06	02/07/23 14:39	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	91		35 - 197	02/03/23 10:06	02/07/23 14:39	1

Lab Sample ID: LCS 320-651610/2-A
Matrix: Water
Analysis Batch: 652417

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 651610

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000219		ug/L		110	67 - 158		
2,3,7,8-TCDF			0.000200	0.000226		ug/L		113	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.00106		ug/L		106	70 - 142		
1,2,3,7,8-PeCDF			0.00100	0.00107	MB	ug/L		107	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.00107		ug/L		107	68 - 160		
1,2,3,4,7,8-HxCDD			0.00100	0.00104	MB	ug/L		104	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.00110	MB	ug/L		110	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.00109	MB	ug/L		109	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.00107	MB	ug/L		107	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.00109	MB	ug/L		109	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.00108	MB	ug/L		108	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.00109	MB	ug/L		109	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.00108	MB	ug/L		108	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.00110	MB	ug/L		110	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.00109	MB	ug/L		109	78 - 138		
OCDD			0.00200	0.00214	MB	ug/L		107	78 - 144		
OCDF			0.00200	0.00227	MB	ug/L		113	63 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	67		20 - 175
13C-2,3,7,8-TCDF	66		22 - 152
13C-1,2,3,7,8-PeCDD	70		21 - 227
13C-1,2,3,7,8-PeCDF	69		21 - 192
13C-2,3,4,7,8-PeCDF	68		13 - 328
13C-1,2,3,4,7,8-HxCDD	67		21 - 193
13C-1,2,3,6,7,8-HxCDD	72		25 - 163
13C-1,2,3,4,7,8-HxCDF	62		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-651610/2-A
Matrix: Water
Analysis Batch: 652417

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 651610

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	71		21 - 159
13C-1,2,3,7,8,9-HxCDF	75		17 - 205
13C-2,3,4,6,7,8-HxCDF	74		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	69		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	66		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	70		20 - 186
13C-OCDD	71		13 - 199
13C-OCDF	70		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	89		31 - 191

Lab Sample ID: LCSD 320-651610/3-A
Matrix: Water
Analysis Batch: 652417

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 651610

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000220		ug/L		110	67 - 158	1	50
2,3,7,8-TCDF			0.000200	0.000235		ug/L		117	75 - 158	4	50
1,2,3,7,8-PeCDD			0.00100	0.00109		ug/L		109	70 - 142	3	50
1,2,3,7,8-PeCDF			0.00100	0.00111	MB	ug/L		111	80 - 134	4	50
2,3,4,7,8-PeCDF			0.00100	0.00111		ug/L		111	68 - 160	3	50
1,2,3,4,7,8-HxCDD			0.00100	0.00115	MB	ug/L		115	70 - 164	10	50
1,2,3,6,7,8-HxCDD			0.00100	0.00108	MB	ug/L		108	76 - 134	1	50
1,2,3,7,8,9-HxCDD			0.00100	0.00118	MB	ug/L		118	64 - 162	8	50
1,2,3,4,7,8-HxCDF			0.00100	0.00114	MB	ug/L		114	72 - 134	6	50
1,2,3,6,7,8-HxCDF			0.00100	0.00111	MB	ug/L		111	84 - 130	1	50
1,2,3,7,8,9-HxCDF			0.00100	0.00111	MB	ug/L		111	78 - 130	3	50
2,3,4,6,7,8-HxCDF			0.00100	0.00112	MB	ug/L		112	70 - 156	3	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.00112	MB	ug/L		112	70 - 140	4	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00114	MB	ug/L		114	82 - 122	3	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.00112	MB	ug/L		112	78 - 138	3	50
OCDD			0.00200	0.00221	MB	ug/L		111	78 - 144	3	50
OCDF			0.00200	0.00234	MB	ug/L		117	63 - 170	3	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	71		20 - 175
13C-2,3,7,8-TCDF	69		22 - 152
13C-1,2,3,7,8-PeCDD	74		21 - 227
13C-1,2,3,7,8-PeCDF	73		21 - 192
13C-2,3,4,7,8-PeCDF	69		13 - 328
13C-1,2,3,4,7,8-HxCDD	65		21 - 193
13C-1,2,3,6,7,8-HxCDD	74		25 - 163
13C-1,2,3,4,7,8-HxCDF	62		19 - 202
13C-1,2,3,6,7,8-HxCDF	73		21 - 159
13C-1,2,3,7,8,9-HxCDF	78		17 - 205
13C-2,3,4,6,7,8-HxCDF	78		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	73		26 - 166

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-651610/3-A
Matrix: Water
Analysis Batch: 652417

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 651610

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDF	67		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	74		20 - 186
13C-OCDD	76		13 - 199
13C-OCDF	74		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	91		31 - 191

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Specialty Organics

Prep Batch: 651610

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1 - RA	Outfall011_20230120_Comp	Total/NA	Water	1613B	
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	1613B	
MB 320-651610/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-651610/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-651610/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 652417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	1613B	651610
MB 320-651610/1-A	Method Blank	Total/NA	Water	1613B	651610
LCS 320-651610/2-A	Lab Control Sample	Total/NA	Water	1613B	651610
LCSD 320-651610/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	651610

Analysis Batch: 652668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1 - RA	Outfall011_20230120_Comp	Total/NA	Water	1613B	651610

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Client Sample ID: Outfall011_20230120_Comp
Lab Sample ID: 570-124873-1

Date Collected: 01/20/23 11:20
Matrix: Water
Date Received: 01/20/23 18:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		1044.4 mL	20.0 uL	651610	02/03/23 10:06	CGB	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	652668	02/09/23 15:07	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			1044.4 mL	20.0 uL	651610	02/03/23 10:06	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	652417	02/07/23 20:05	GRB	EET SAC
	Instrument ID: 12D5									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 570-124873-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23 *
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-2
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Job ID: 570-124873-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124873-1	Outfall011_20230120_Comp	Water	01/20/23 11:20	01/20/23 18:30

Eurofins Calscience Irvine

570-124873 Chain of Custody

CHAIN OF CUSTODY FORM

124873

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

									R	R	R	R	R	R	R	R	R	R	R	C		
									ANALYSIS REQUIRED													
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals. (E200.7): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl- SO_4, Nitrate-N Nitrite-N NO3+NO2-N Perchlorate (E300)	Turbidity TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals. Mercury (E245.1)	Total Recoverable Metals. (E200.7) As, Mn Fe			Comments
Outfall 011	Outfall011_20230120_Comp	1/20/2023 1120	WM	500 mL Poly	1	HNO_3	90	No	X										X	X			Outfall 011 analyze for As, Mn and Fe.
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	1L Poly	1	None	115	No			X												
			WM	500 mL Poly	2	None	120	No				X											
			WM	500 mL Poly	2	None	130	No					X										48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X									48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X							
			WM	1 L Glass Amber	2	None	170	No									X						
			WM	1 L Glass Amber	2	None	180	No										X					
			WM	1L Poly	1	None	185	No							X								
	Outfall011_20230120_Comp_Extra	1/20/2023 1120	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	500 mL Poly	2	None	120	No				H											Hold
			WM	500 mL Poly	2	None	130	No					H										Hold
			WM	1 L Glass Amber	2	None	170	No									H						Hold
			WM	1 L Glass Amber	2	None	180	No										H					Hold

Legend. C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-20-2023/1310	H&A	[signature]	1/20/23 1310 EC
[signature]	1/20/23 1830	EC	[signature]	1/20/23 1836

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: ___X___

2.1/2.1 1.7/1.7 1.5/1.5 Sc II

2/14/2023

2019-2020 Rainy Season
Version 4

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

124873

Client Name/Address. Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED											
									R	R	R	R	R	C						
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals (E200.7) Zn (E200.8) Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0) Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA	Total Dissolved Metals: Mercury (E245.1)	Total Dissolved Metals. (E200.7): As, Mn, Fe						Comments
Outfall 011	Outfall011_20230120_Comp_F	1/20/2023 1120	WM	1L Poly	1	None	200	No	X					X						Filter and preserve w/in 24hrs of receipt at lab. Outfall 011 analyze for As, Mn and Fe.
			WM	borosilicate vials	1	None	320	No					X							Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall011_20230120_Comp	1/20/2023 1120	WM	500 mL Poly	1	NaOH	220	No		X										
			WM	2.5 Gal Cube	1	None	225	No			X									Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No												
			~~WM~~	~~1 Gal Cube~~	~~6~~	~~None~~	~~235~~	~~No~~				X								~~Only test if first or second rain events of the year. Deliver to ABC Labs in Ventura, CA.~~

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company	Received By	Date/Time:
	1-20-2023 1310	H&A		1/20/23 1310 EC
	1/20/23 1830	EC		1/20/23 1830

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: ___X___

~~2.5/2.5 SCH~~ VM

2/14/2023

2019-2020 Rainy Season
Version 4

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No: 570-204882 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-124873-3
Address: 13715 Rider Trail North, ,	Due Date Requested: 2/24/2023			
City: Earth City	TAT Requested (days)			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 001 - COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Evaporation Gross Alpha/Beta	903.0/PreoSep_21 Radium-226	904.0/PreoSep_0 Radium-228	905_Sr90/PreoSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X								X	
Outfall011_20230120_Comp (570-124873-1)	1/20/23	11 20 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/23/23 1355				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

2/14/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel, Virendra	Carrier Tracking No(s).	COC No. 570-204885 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-124873-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 2/9/2023			
City: West Sacramento	TAT Requested (days)			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 001 - COMP	Project #: 44024446			
Site:	SSOW#:			

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall011_20230120_Comp (570-124873-1)	1/20/23	11 20 Pacific		Water			X		2	See QAS, Boeing_w/u to zero ug/L, Use Boeing glassware.
Outfall011_20230120_Comp_Extra (570-124873-2)	1/20/23	11 20 Pacific		Water				X	2	See QAS, Boeing_w/u to zero ug/L, Use Boeing glassware.

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/23/23 1412				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

2/14/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204885.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-124873-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 2/9/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 001 - COMP	Project #: 44024446			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall011_20230120_Comp (570-124873-1)	1/20/23	11:20 Pacific		Water			X		2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.
Outfall011_20230120_Comp_Extra (570-124873-2)	1/20/23	11:20 Pacific		Water				X	2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 1/23/23 1412	Company	Received by:	Date/Time: 1/23/23 1412	Company		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company		

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: Seal	Cooler Temperature(s) °C and Other Remarks: 1.8

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124873-2

Login Number: 124873
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124873-2

Login Number: 124873
List Number: 3
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 01/24/23 11:32 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.8c 1.6c 2.0c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/23/2023 1:27:44 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 011 - COMP

JOB NUMBER

570-124873-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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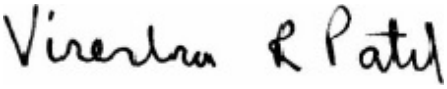

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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-124873-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Qualifiers

Rad

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124873-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124873-3

Comments
No additional comments.

Receipt
The samples were received on 1/20/2023 6:30 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.5º C, 1.7º C and 2.1º C.

Receipt Exceptions

The reference method requires samples to have a pH of 2. The following samples were received with a pH of 6. The samples were adjusted to the appropriate pH in the laboratory.

Job#: 570-124887 R-1
Job#: 570-124898 R-1
Job #: 570-124868 R-1
Job #: 570-124873 R-1
Job #: 570-124890 K-1
Job #: 570-124891 J-1

RAD
Method 900.0: Gross Alpha and Gross Beta batch 598963
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall011_20230120_Comp (570-124873-1), (LCS 160-598963/2-A), (LCSB 160-598963/3-A), (MB 160-598963/1-A), (570-124887-R-1-G), (570-124887-R-1-J DU), (570-124887-R-1-H MS) and (570-124887-R-1-I MSBT)

Method 900.0: Gross Alpha Beta prep batch 160-598963:

The matrix spike (MS) recoveries for preparation batch 160-598963 and analytical batch 160-600333 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.(570-124887-R-1-H MS)

Method 901.1: Gamma Prep Batch 160-598560
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224

Job ID: 570-124873-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Outfall011_20230120_Comp (570-124873-1), (570-124868-R-1-E) and (570-124868-R-1-F DU)

Methods 903.0, 9315: Radium-226 prep batch 160-598272:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall011_20230120_Comp (570-124873-1), (LCS 160-598272/2-A), (LCSD 160-598272/3-A) and (MB 160-598272/1-A)

Methods 904.0, 9320: Radium-228 batch 598275
The LCS/LCSD recovered at (LCS 131% / LCSD 129%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCS 160-598275/2-A) and (LCSD 160-598275/3-A)

Methods 904.0, 9320: Gamma prep batch 160-598275:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall011_20230120_Comp (570-124873-1), (LCS 160-598275/2-A), (LCSD 160-598275/3-A) and (MB 160-598275/1-A)

Method 905: Strontium-90 prep batch 160-598546:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall011_20230120_Comp (570-124873-1), (LCS 160-598546/2-A), (LCSD 160-598546/3-A) and (MB 160-598546/1-A)

Method 906.0: Tritium 598717
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall011_20230120_Comp (570-124873-1), (LCS 160-598717/2-A), (MB 160-598717/1-A), (570-124392-Q-1-A), (570-124392-Q-1-B DU), (570-124868-Q-1-A) and (570-124868-Q-1-B MS)

Method A-01-R: Isotopic Uranium batch 598317

Job ID: 570-124873-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall011_20230120_Comp (570-124873-1), (LCS 160-598317/2-A), (MB 160-598317/1-A), (570-124898-R-1-C) and (570-124898-R-1-D DU)

Method ExtChrom: Uranium Prep Batch 160-598317:

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: Outfall011_20230120_Comp (570-124873-1).

Method PrecSep_0: Radium-228 Prep Batch 160-598275

The following sample was prepared at a reduced aliquot due to Matrix: Outfall011_20230120_Comp (570-124873-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep_0: Radium-228 Prep Batch 160-598275

Insufficient sample volume was available to perform a sample duplicate for the following samples: Outfall011_20230120_Comp (570-124873-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-21: Radium-226 Prep Batch 160-598272

The following sample was prepared at a reduced aliquot due to Matrix: Outfall011_20230120_Comp (570-124873-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21: Radium-226 Prep Batch 160-598272

Insufficient sample volume was available to perform a sample duplicate for the following samples: Outfall011_20230120_Comp (570-124873-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 160-598546

Insufficient sample volume was available to perform a sample duplicate for the following samples: Outfall011_20230120_Comp (570-124873-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 160-598546

The following sample was prepared at a reduced aliquot due to Matrix: Outfall011_20230120_Comp (570-124873-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Client Sample ID: Outfall011_20230120_Comp
Lab Sample ID: 570-124873-1

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: Outfall011_20230120_Comp
Lab Sample ID: 570-124873-1
Date Collected: 01/20/23 11:20
Matrix: Water
Date Received: 01/20/23 18:30

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.195	U	0.773	0.773	3.00	1.41	pCi/L	02/02/23 12:38	02/14/23 19:55	1
Gross Beta	**1.15**		0.579	0.590	4.00	0.835	pCi/L	02/02/23 12:38	02/14/23 19:55	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: Outfall011_20230120_Comp
Date Collected: 01/20/23 11:20
Date Received: 01/20/23 18:30

Lab Sample ID: 570-124873-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	0.414	U	7.51	7.51	20.0	9.37	pCi/L	01/27/23 16:27	02/22/23 11:30	1
Potassium-40	-36.5	U	91.0	91.2		128	pCi/L	01/27/23 16:27	02/22/23 11:30	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: Outfall011_20230120_Comp
Date Collected: 01/20/23 11:20
Date Received: 01/20/23 18:30

Lab Sample ID: 570-124873-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0111	U	0.0619	0.0619	1.00	0.122	pCi/L	01/26/23 09:36	02/21/23 17:55	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.9*		*30 - 110*	*01/26/23 09:36*	*02/21/23 17:55*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: Outfall011_20230120_Comp
Date Collected: 01/20/23 11:20
Date Received: 01/20/23 18:30

Lab Sample ID: 570-124873-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.23		0.534	0.546	1.00	0.682	pCi/L	01/26/23 09:50	02/01/23 12:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.9*		*30 - 110*	*01/26/23 09:50*	*02/01/23 12:08*	*1*
Y Carrier	*81.1*		*30 - 110*	*01/26/23 09:50*	*02/01/23 12:08*	*1*

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: Outfall011_20230120_Comp
Date Collected: 01/20/23 11:20
Date Received: 01/20/23 18:30

Lab Sample ID: 570-124873-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.539	U	0.441	0.443	3.00	0.701	pCi/L	01/27/23 12:54	02/08/23 15:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*89.6*		*30 - 110*	*01/27/23 12:54*	*02/08/23 15:59*	*1*
Y Carrier	*78.1*		*30 - 110*	*01/27/23 12:54*	*02/08/23 15:59*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: Outfall011_20230120_Comp
Lab Sample ID: 570-124873-1
Date Collected: 01/20/23 11:20
Matrix: Water
Date Received: 01/20/23 18:30

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	132	U	168	169	500	279	pCi/L	01/31/23 12:11	02/02/23 02:25	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: Outfall011_20230120_Comp
Lab Sample ID: 570-124873-1
Date Collected: 01/20/23 11:20
Matrix: Water
Date Received: 01/20/23 18:30

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.314		0.259	0.259	1.00	0.266	pCi/L	01/26/23 16:02	02/13/23 13:57	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-124873-1	Outfall011_20230120_Comp	88.9
LCS 160-598272/2-A	Lab Control Sample	101
LCSD 160-598272/3-A	Lab Control Sample Dup	105
MB 160-598272/1-A	Method Blank	96.9

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-124873-1	Outfall011_20230120_Comp	88.9	81.1
LCS 160-598275/2-A	Lab Control Sample	101	85.6
LCSD 160-598275/3-A	Lab Control Sample Dup	105	86.4
MB 160-598275/1-A	Method Blank	96.9	85.6

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-124873-1	Outfall011_20230120_Comp	89.6	78.1
LCS 160-598546/2-A	Lab Control Sample	85.4	87.5
LCSD 160-598546/3-A	Lab Control Sample Dup	88.3	86.4
MB 160-598546/1-A	Method Blank	87.1	87.1

Tracer/Carrier Legend

Sr = Sr Carrier

Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-124898-R-1-D DU	Duplicate	83.0
LCS 160-598317/2-A	Lab Control Sample	82.4
MB 160-598317/1-A	Method Blank	86.3

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-598963/1-A
Matrix: Water
Analysis Batch: 600139

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598963

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.09917	U	0.402	0.402	3.00	0.768	pCi/L	02/02/23 12:38	02/13/23 20:06	1
Gross Beta	-0.06316	U	0.387	0.387	4.00	0.721	pCi/L	02/02/23 12:38	02/13/23 20:06	1

Lab Sample ID: LCS 160-598963/2-A
Matrix: Water
Analysis Batch: 600139

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598963

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	47.32		7.04	3.00	1.92	pCi/L	94	75 - 125

Lab Sample ID: LCSB 160-598963/3-A
Matrix: Water
Analysis Batch: 600139

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598963

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.7	69.87		7.52	4.00	0.802	pCi/L	95	75 - 125

Lab Sample ID: 570-124887-R-1-H MS
Matrix: Water
Analysis Batch: 600333

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598963

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	0.648	U	50.5	21.15	F1	4.07	3.00	2.28	pCi/L	41	60 - 140

Lab Sample ID: 570-124887-R-1-I MSBT
Matrix: Water
Analysis Batch: 600333

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598963

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	1.93		73.7	72.66		7.82	4.00	0.963	pCi/L	96	60 - 140

Lab Sample ID: 570-124887-R-1-J DU
Matrix: Water
Analysis Batch: 600334

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 598963

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	0.648	U	0.1221	U	0.967	3.00	1.85	pCi/L	0.22	1
Gross Beta	1.93		1.198		0.572	4.00	0.785	pCi/L	0.57	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-598560/1-A
Matrix: Water
Analysis Batch: 601380

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598560

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.540	U	4.68	4.69	20.0	5.50	pCi/L	01/27/23 16:27	02/22/23 04:55	1
Potassium-40	29.54	U	87.5	87.6		89.2	pCi/L	01/27/23 16:27	02/22/23 04:55	1

Lab Sample ID: LCS 160-598560/2-A
Matrix: Water
Analysis Batch: 601377

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598560

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	145200		17300		291	pCi/L	107	75 - 125
Cesium-137	40900	41940		5000	20.0	80.3	pCi/L	102	75 - 125
Cobalt-60	18000	18820		2240		41.1	pCi/L	104	75 - 125

Lab Sample ID: 570-124868-R-1-F DU
Matrix: Water
Analysis Batch: 601377

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 598560

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	-1.28	U	-4.041	U	9.43	20.0	11.3	pCi/L	0.16	1
Potassium-40	35.2	U	-70.31	U	114		149	pCi/L	0.59	1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-598272/1-A
Matrix: Water
Analysis Batch: 601085

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598272

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.02830	U	0.0410	0.0411	1.00	0.0968	pCi/L	01/26/23 09:36	02/21/23 17:54	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.9*		*30 - 110*	*01/26/23 09:36*	*02/21/23 17:54*	*1*

Lab Sample ID: LCS 160-598272/2-A
Matrix: Water
Analysis Batch: 601085

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598272

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	10.88		1.10	1.00	0.0974	pCi/L	96	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*101*		*30 - 110*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-598272/3-A
Matrix: Water
Analysis Batch: 601085

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 598272

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	10.61		1.07	1.00	0.0992	pCi/L	94	75 - 125	0.13	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*105*		*30 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-598275/1-A
Matrix: Water
Analysis Batch: 598871

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598275

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.06539	U	0.232	0.232	1.00	0.461	pCi/L	01/26/23 09:50	02/01/23 12:04	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.9*		*30 - 110*	*01/26/23 09:50*	*02/01/23 12:04*	*1*
Y Carrier	*85.6*		*30 - 110*	*01/26/23 09:50*	*02/01/23 12:04*	*1*

Lab Sample ID: LCS 160-598275/2-A
Matrix: Water
Analysis Batch: 598871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598275

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.23	10.75		1.38	1.00	0.513	pCi/L	131	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*101*		*30 - 110*
Y Carrier	*85.6*		*30 - 110*

Lab Sample ID: LCSD 160-598275/3-A
Matrix: Water
Analysis Batch: 598871

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 598275

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.23	10.62		1.34	1.00	0.390	pCi/L	129	75 - 125	0.05	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*105*		*30 - 110*
Y Carrier	*86.4*		*30 - 110*

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-598546/1-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598546

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.1970	U	0.181	0.182	3.00	0.291	pCi/L	01/27/23 12:54	02/08/23 15:57	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*87.1*		*30 - 110*	*01/27/23 12:54*	*02/08/23 15:57*	*1*
Y Carrier	*87.1*		*30 - 110*	*01/27/23 12:54*	*02/08/23 15:57*	*1*

Lab Sample ID: LCS 160-598546/2-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598546

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.37	7.382		0.816	3.00	0.271	pCi/L	100	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*85.4*		*30 - 110*
Y Carrier	*87.5*		*30 - 110*

Lab Sample ID: LCSD 160-598546/3-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 598546

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.37	7.433		0.819	3.00	0.316	pCi/L	101	75 - 125	0.03	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*88.3*		*30 - 110*
Y Carrier	*86.4*		*30 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-598717/1-A
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598717

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-27.93	U	147	147	500	270	pCi/L	01/31/23 12:11	02/01/23 21:31	1

Lab Sample ID: LCS 160-598717/2-A
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598717

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2110	1839		333	500	270	pCi/L	87	75 - 125		

Method: 906.0 - Tritium, Total (LSC) (Continued)

Lab Sample ID: 570-124868-Q-1-B MS
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598717

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium	123	U	2160	2177		373	500	286	pCi/L	95	60 - 140		

Lab Sample ID: 570-124392-Q-1-B DU
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 598717

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Tritium	0.901	U		2.703	U	159	500	289	pCi/L			0.01	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-598317/1-A
Matrix: Water
Analysis Batch: 600238

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598317

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.1240		0.1019	0.1021	1.00	0.124	pCi/L	01/26/23 16:02	02/13/23 13:57	1

Lab Sample ID: LCS 160-598317/2-A
Matrix: Water
Analysis Batch: 600239

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598317

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	13.54		1.51	1.00	0.165	pCi/L	106	75 - 125		
Uranium-238			13.0	14.49		1.59	1.00	0.112	pCi/L	111	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*82.4*		*30 - 110*

Lab Sample ID: 570-124898-R-1-D DU
Matrix: Water
Analysis Batch: 600216

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 598317

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Total Uranium	0.0800	U		0.1269	U	0.138	1.00	0.198	pCi/L			0.20	1

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Prep Batch: 598272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	PrecSep-21	
MB 160-598272/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-598272/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-598272/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 598275

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	PrecSep_0	
MB 160-598275/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-598275/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-598275/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 598317

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	ExtChrom	
MB 160-598317/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-598317/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-124898-R-1-D DU	Duplicate	Total/NA	Water	ExtChrom	

Prep Batch: 598546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	PrecSep-7	
MB 160-598546/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-598546/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-598546/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 598560

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	Fill_Geo-0	
MB 160-598560/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-598560/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-124868-R-1-F DU	Duplicate	Total/NA	Water	Fill_Geo-0	

Prep Batch: 598717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	LSC_Dist_Susp	
MB 160-598717/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-598717/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
570-124868-Q-1-B MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
570-124392-Q-1-B DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 598963

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124873-1	Outfall011_20230120_Comp	Total/NA	Water	Evaporation	
MB 160-598963/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-598963/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-598963/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-124887-R-1-H MS	Matrix Spike	Total/NA	Water	Evaporation	
570-124887-R-1-I MSBT	Matrix Spike	Total/NA	Water	Evaporation	
570-124887-R-1-J DU	Duplicate	Total/NA	Water	Evaporation	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Client Sample ID: Outfall011_20230120_Comp
Lab Sample ID: 570-124873-1
Date Collected: 01/20/23 11:20
Matrix: Water
Date Received: 01/20/23 18:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Evaporation			200.01 mL	1.0 g	598963	02/02/23 12:38	MST	EET SL
Total/NA	Analysis	900.0		1			600305	02/14/23 19:55	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 mL	598560	01/27/23 16:27	SAC	EET SL
Total/NA	Analysis	901.1		1			601377	02/22/23 11:30	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	PrecSep-21			743.86 mL	1.0 g	598272	01/26/23 09:36	DJP	EET SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	601085	02/21/23 17:55	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			743.86 mL	1.0 g	598275	01/26/23 09:50	DJP	EET SL
Total/NA	Analysis	904.0		1			598876	02/01/23 12:08	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep-7			504.45 mL	1.0 g	598546	01/27/23 12:54	DJP	EET SL
Total/NA	Analysis	905		1			599671	02/08/23 15:59	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	LSC_Dist_Susp			95.22 mL	1.0 g	598717	01/31/23 12:11	SEH	EET SL
Total/NA	Analysis	906.0		1			599486	02/02/23 02:25	REV	EET SL
	Instrument ID: LSCAQUA									
Total/NA	Prep	ExtChrom			252.21 mL	1.0 mL	598317	01/26/23 16:02	MAL	EET SL
Total/NA	Analysis	A-01-R		1			600243	02/13/23 13:57	FLC	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 570-124873-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124873-3
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 011 - COMP

Job ID: 570-124873-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124873-1	Outfall011_20230120_Comp	Water	01/20/23 11:20	01/20/23 18:30

Eurofins Calscience Irvine

570-124873 Chain of Custody

CHAIN OF CUSTODY FORM

124873
Page 1 of 2

Client Name/Address: Haley & Aldrich, 5333 Mission Center Rd Suite 300, San Diego, CA 92108	Project: Boeing-SSFL NPDES, Permit 2023, Routine Outfall [001, 002, 011, 018], Outfall 011, Comp
Eurofins Calscience Irvine Contact: Christian Bondoc, 17461 Derian Ave Suite #100, Irvine CA 92614, Tel: 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

ANALYSIS REQUIRED

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R: Total Recoverable Metals. (E200.7): Zn (E200.8): Cu, Pb, Cd, Se	R: TCDD (and all congeners) (E1613B)	R: BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	R: Surfactants (MBAS) (SM5540C/E425.1)	R: Cl- SO_4, Nitrate-N Nitrite-N NO3+NO2-N Perchlorate (E300)	R: Turbidity TDS (SM2540C/E180.1)	R: TSS (160.2 (SM2540D))	R: Ammonia-N (350.2)	R: alpha-BHC (E608)	R: 2,4,6 TCP 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	R: Total Recoverable Metals. Mercury (E245.1)	C: Total Recoverable Metals. (E200.7) As, Mn Fe		Comments
Outfall 011	Outfall011_20230120_Comp	1/20/2023 1120	WM	500 mL Poly	1	HNO_3	90	No	X										X	X		Outfall 011 analyze for As, Mn and Fe.
			WM	1 L Glass Amber	2	None	110	No		X												
			WM	1L Poly	1	None	115	No			X											
			WM	500 mL Poly	2	None	120	No				X										
			WM	500 mL Poly	2	None	130	No					X									48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X								48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X						
			WM	1 L Glass Amber	2	None	170	No									X					
			WM	1 L Glass Amber	2	None	180	No										X				
			WM	1L Poly	1	None	185	No							X							
	Outfall011_20230120_Comp_Extra	1/20/2023 1120	WM	1 L Glass Amber	2	None	110	No		H												Hold
			WM	500 mL Poly	2	None	120	No				H										Hold
			WM	500 mL Poly	2	None	130	No					H									Hold
			WM	1 L Glass Amber	2	None	170	No									H					Hold
			WM	1 L Glass Amber	2	None	180	No										H				Hold

Legend. C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-20-2023 / 1310	H/A	[signature]	1/20/23 1310 EC
[signature]	1/20/23 1830	EC	[signature]	1/20/23 1830

Turn-around time: (Check)
24 Hour: ______ 72 Hour: ______ 10 Day: __X__
48 Hour: ______ 5 Day: ______ Normal: ______

Sample Integrity: (Check)
Intact: ______ On Ice: ______
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: ______ All Level IV: __X__

2.1/2.1 1.7/1.7 1.5/1.5 SC11

2019-2020 Rainy Season
Version 4

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address. Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler Adrian Mobeka	Field Manager Mark Dominick 978.234.5033, 818.599.0702 (cell)

ANALYSIS REQUIRED

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R: Total Dissolved Metals (E200.7) Zn (E200.8) Cu, Pb, Cd, Se	R: Cyanide (SM4500-CN-E / E335.2)	R: Gross Alpha(E900.0), Gross Beta(E900.0) Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901 0 or E901 1)	R: Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA	R: Total Dissolved Metals Mercury (E245.1)	C: Total Dissolved Metals. (E200.7) As, Mn, Fe						Comments
Outfall 011	Outfall011_20230120_Comp_F	1/20/2023 / 1120	WM	1L Poly	1	None	200	No	X					X						Filter and preserve w/in 24hrs of receipt at lab. Outfall 011 analyze for As, Mn and Fe.
			WM	borosilicate vials	1	None	320	No					X							Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall011_20230120_Comp	1/20/2023 / 1120	WM	500 mL Poly	1	NaOH	220	No		X										
			WM	2.5 Gal Cube	1	None	225	No			X									Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No												
			~~WM~~	~~1 Gal Cube~~	~~6~~	~~None~~	~~235~~	~~No~~				~~X~~								~~Only test if first or second rain events of the year. Deliver to ABC Labs in Ventura, CA.~~

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company	Received By	Date/Time:	
[signature]	1-20-2023/1310	H/A	[signature]	1/20/23 1310 EC	Turn-around time: (Check) 24 Hour ____ 72 Hour ____ 10 Day: X 48 Hour ____ 5 Day ____ Normal: ____
[signature]	1/20/23 1830	EC	[signature]	1/20/23 1830	Sample Integrity (Check) Intact: ____ On Ice: ____
					Store samples for 6 months. Data Requirements. (Check) No Level IV ____ All Level IV: X

~~2.5/2.5~~ [illegible] vm

2019-2020 Rainy Season
Version 4

2/23/2023

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No: 570-204882 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-124873-3
Address: 13715 Rider Trail North, ,	Due Date Requested: 2/24/2023			
City: Earth City	TAT Requested (days)			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 001 - COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Evaporation Gross Alpha/Beta	903.0/PreoSep_21 Radium-226	904.0/PreoSep_0 Radium-228	905_Sr90/PreoSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X								X	
Outfall011_20230120_Comp (570-124873-1)	1/20/23	11 20 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/23/23 1355				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

2/23/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel, Virendra	Carrier Tracking No(s).	COC No. 570-204885 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-124873-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 2/9/2023			
City: West Sacramento	TAT Requested (days)			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 001 - COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall011_20230120_Comp (570-124873-1)	1/20/23	11 20 Pacific		Water			X		2	See QAS, Boeing_w/u to zero ug/L, Use Boeing glassware.
Outfall011_20230120_Comp_Extra (570-124873-2)	1/20/23	11 20 Pacific		Water				X	2	See QAS, Boeing_w/u to zero ug/L, Use Boeing glassware.

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/23/23 1412				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

2/23/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204882.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-124873-3
Address: 13715 Rider Trail North, ,	Due Date Requested: 2/24/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 001 - COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Evaporation Gross Alpha/Beta	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall011_20230120_Comp (570-124873-1)	1/20/23	11:20 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature] FEDEX	1/23/23 1355		FEDEX		
2	Relinquished by:	Date/Time:	Company	Briana Sharkey-Gonzalez	1/24/23 8:50am	ETSSL
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

2/23/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124873-3

Login Number: 124873
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124873-3

Login Number: 124873
List Number: 2
Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis
List Creation: 01/24/23 11:44 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/12/2023 10:24:33 AM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall 011 - Grab

JOB NUMBER

570-129007-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

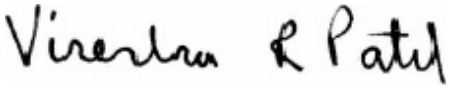
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



Generated
3/12/2023 10:24:33 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-129007-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Grab

Qualifiers

General Chemistry

Qualifier	Qualifier Description
BU	Analyzed out of holding time
BV	Sample received after holding time expired

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc. Job ID: 570-129007-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Grab

Job ID: 570-129007-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129007-1

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.6º C.

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-307642.The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method SM 2540F: The following sample was received outside of holding time: Outfall011_20230225_Grab (570-129007-1).

Method SM 2540F: Insufficient sample volume was available to perform sample duplicate (DUP) associated with analytical batch 570-307843.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 1664A: The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-308085.
Method: 1664.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129007-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Grab

Client Sample ID: Outfall011_20230225_Grab
Lab Sample ID: 570-129007-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	67		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA
Settleable Solids	0.10	BU BV	0.10	0.10	mL/L	1		SM 2540F	Total/NA

Client Sample ID: TB-20230225
Lab Sample ID: 570-129007-3

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: Outfall011_20230225_Grab **Lab Sample ID: 570-129007-1**
Date Collected: 02/25/23 07:40 **Matrix: Water**
Date Received: 02/27/23 18:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			02/28/23 19:01	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			02/28/23 19:01	1
Trichloroethene	ND		0.50	0.17	ug/L			02/28/23 19:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*60 - 140*		*02/28/23 19:01*	*1*
Toluene-d8 (Surr)	*104*		*60 - 140*		*02/28/23 19:01*	*1*

Client Sample ID: TB-20230225 **Lab Sample ID: 570-129007-3**
Date Collected: 02/25/23 07:40 **Matrix: Water**
Date Received: 02/27/23 18:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			02/28/23 17:10	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			02/28/23 17:10	1
Trichloroethene	ND		0.50	0.17	ug/L			02/28/23 17:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*60 - 140*		*02/28/23 17:10*	*1*
Toluene-d8 (Surr)	*97*		*60 - 140*		*02/28/23 17:10*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-129007-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Grab

General Chemistry

Client Sample ID: Outfall011_20230225_Grab
Lab Sample ID: 570-129007-1
Date Collected: 02/25/23 07:40
Matrix: Water
Date Received: 02/27/23 18:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	ND		1.0	0.53	mg/L		03/01/23 14:04	03/02/23 12:27	1
Specific Conductance (SM 2510B)	**67**		1.0	1.0	umhos/cm			03/09/23 23:01	1
Settleable Solids (SM 2540F)	**0.10**	**BU BV**	0.10	0.10	mL/L			02/27/23 20:30	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129007-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Grab

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		BFB	TOL								
Lab Sample ID	Client Sample ID	(60-140)	(60-140)								
570-129007-1	Outfall011_20230225_Grab	96	104								
570-129007-3	TB-20230225	99	97								
LCS 570-307642/1003	Lab Control Sample	98	100								
LCSD 570-307642/4	Lab Control Sample Dup	98	98								
MB 570-307642/6	Method Blank	95	99								

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-307642/6
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			02/28/23 12:54	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			02/28/23 12:54	1
Trichloroethene	ND		0.50	0.17	ug/L			02/28/23 12:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*60 - 140*		*02/28/23 12:54*	*1*
Toluene-d8 (Surr)	*99*		*60 - 140*		*02/28/23 12:54*	*1*

Lab Sample ID: LCS 570-307642/1003
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1-Dichloroethene			10.0	10.8		ug/L		108	50 - 150		
1,2-Dichloroethane			10.0	9.48		ug/L		95	70 - 130		
Trichloroethene			10.0	10.6		ug/L		106	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*
Toluene-d8 (Surr)	*100*		*60 - 140*

Lab Sample ID: LCSD 570-307642/4
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene			10.0	10.8		ug/L		108	50 - 150	0	32
1,2-Dichloroethane			10.0	9.66		ug/L		97	70 - 130	2	49
Trichloroethene			10.0	10.7		ug/L		107	65 - 135	1	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*
Toluene-d8 (Surr)	*98*		*60 - 140*

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-308085/1-A
Matrix: Water
Analysis Batch: 308437

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 308085

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		1.0	0.51	mg/L		03/01/23 14:04	03/02/23 12:27	1

Method: 1664A - HEM and SGT-HEM (Continued)

Lab Sample ID: LCS 570-308085/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 308437 **Prep Batch: 308085**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM (Oil & Grease)	40.0	36.6		mg/L		92	78 - 114

Lab Sample ID: LCSD 570-308085/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 308437 **Prep Batch: 308085**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM (Oil & Grease)	40.0	37.1		mg/L		93	78 - 114	1	18

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-310457/46 **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 310457

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/09/23 22:33	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129007-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Grab

GC/MS VOA

Analysis Batch: 307642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129007-1	Outfall011_20230225_Grab	Total/NA	Water	624.1	
570-129007-3	TB-20230225	Total/NA	Water	624.1	
MB 570-307642/6	Method Blank	Total/NA	Water	624.1	
LCS 570-307642/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-307642/4	Lab Control Sample Dup	Total/NA	Water	624.1	

General Chemistry

Analysis Batch: 307843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129007-1	Outfall011_20230225_Grab	Total/NA	Water	SM 2540F	

Prep Batch: 308085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129007-1	Outfall011_20230225_Grab	Total/NA	Water	1664A	
MB 570-308085/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-308085/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-308085/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 308437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129007-1	Outfall011_20230225_Grab	Total/NA	Water	1664A	308085
MB 570-308085/1-A	Method Blank	Total/NA	Water	1664A	308085
LCS 570-308085/2-A	Lab Control Sample	Total/NA	Water	1664A	308085
LCSD 570-308085/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	308085

Analysis Batch: 310457

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129007-1	Outfall011_20230225_Grab	Total/NA	Water	SM 2510B	
MB 570-310457/46	Method Blank	Total/NA	Water	SM 2510B	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-129007-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Grab

Client Sample ID: Outfall011_20230225_Grab
Lab Sample ID: 570-129007-1
Date Collected: 02/25/23 07:40
Matrix: Water
Date Received: 02/27/23 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	307642	02/28/23 19:01	KHF2	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Prep	1664A			963 mL	1000 mL	308085	03/01/23 14:04	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			308437	03/02/23 12:27	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									
Total/NA	Analysis	SM 2510B		1			310457	03/09/23 23:01	BDH9	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	307843	02/27/23 20:30	GG0B	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB-20230225
Lab Sample ID: 570-129007-3
Date Collected: 02/25/23 07:40
Matrix: Water
Date Received: 02/27/23 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	307642	02/28/23 17:10	KHF2	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 570-129007-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Grab

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129007-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Grab

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4

Protocol References:

1664A = EPA-821-98-002

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129007-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Grab

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129007-1	Outfall011_20230225_Grab	Water	02/25/23 07:40	02/27/23 18:00
570-129007-3	TB-20230225	Water	02/25/23 07:40	02/27/23 18:00

129007

Eurofins Calscience Irvine

570-129007 Chain of Custody

CHAIN OF CUSTODY FORM

EDBPJOUX

Client Name/Address.	Project:	ANALYSIS REQUIRED	Field Readings	Meter serial #
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Grab	R R R R	Field Readings: (Include units) Time of Readings: 0740	
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel. 714-895-5494 **ECI Project #57013187**			DO 15.75 mg/L pH 8.43 pH unit Temp 44.1 °C/(F)	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)		Field readings QC Checked by: MDominick Date/Time: 2-25-2023/0740	
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599 0702 (cell)			

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Oil & Grease (E1664A-HEM)	VOCs - only 1,1-DCE, 1,2-DCA, TCE (E624)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Comments
Outfall 011	Outfall011_20230225_Grab	2/25/2023 0740	WM	1 L Glass Amber	2	HCl	15	No	X				
			WM	40 mL VOA	3	HCl	30	No		X			
			WM	1L Poly	1	None	70	No			X		
			WM	500 mL Poly	1	None	75	No				X	
	Outfall011_20230225_Grab_Extra	2/25/2023 0740	WM	1 L Glass Amber	2	HCl	15	No	H				Hold
			WM	40 mL VOA	3	HCl	30	No		H			Hold
			WM	500 mL Poly	1	None	75	No				H	Hold
Trip Blanks	TB-20230225	2/25/2023 0740	WQ	40 mL VOA	3	HCl	30	No		X			

Legend: R=Routine

Relinquished By	Date/Time:	Company	Received By	Date/Time:
MDominick	2.27.2023/1120	H&A	[illegible]	2/27/23 1120 EC
[illegible]	2/27/23 1800	EC	MPatel	2/27/23 1800
Relinquished By	Date/Time:	Company	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: ___X___

2.7/2.6 SC12

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129007-1

Login Number: 129007
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall 011 - Comp

JOB NUMBER

570-129011-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Eurofins Calscience

Job Notes

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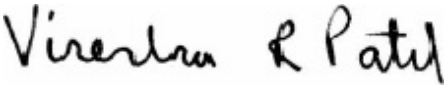
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
LQ	LCS/LCSD recovery above method control limits

GC Semi VOA

Qualifier	Qualifier Description
PI	Primary and confirm results varied by > than 40% RPD

HPLC/IC

Qualifier	Qualifier Description
BU	Analyzed out of holding time
BV	Sample received after holding time expired
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

General Chemistry

Qualifier	Qualifier Description
BU	Analyzed out of holding time
BV	Sample received after holding time expired
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129011-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129011-1

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.5º C and 2.9º C.

GC/MS Semi VOA
Method 625.1 SIM: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 570-307149 and analytical batch 570-307279 recovered outside control limits for the following analytes: 2,4-Dinitrotoluene, 4,6-Dinitro-2-methylphenol, Di-n-octyl phthalate and Di-n-butyl phthalate. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
Method 300.0: The following sample was received outside of holding time: Outfall011_20230225_Comp (570-129011-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 200.8: The method blank for preparation batch 570-307908 and analytical batch 570-308055 contained Iron and Manganese above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 200.8: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-308039 and analytical batch 570-308099 were outside control limits for Zinc. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: Outfall011_20230225_Comp_F (570-129011-3). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: Outfall011_20230225_Comp_F (570-129011-3). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 2130B: The following sample was received outside of holding time: Outfall011_20230225_Comp (570-129011-1).

Method SM5210B: The following sample was received outside of holding time: Outfall011_20230225_Comp (570-129011-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

Job ID: 570-129011-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-308323.The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. 608LL

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-1

Client Sample ID: Outfall011_20230225_Comp — Lab Sample ID: 570-129011-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2.6		1.0	0.36	mg/L	1		300.0	Total/NA
Nitrite as N	0.060	J,DX BU BV	0.10	0.043	mg/L	1		300.0	Total/NA
Nitrate as N	0.41	BU BV	0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate	5.0		1.0	0.24	mg/L	1		300.0	Total/NA
Nitrate Nitrite as N	0.47		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Cadmium	0.13	J,DX	1.0	0.13	ug/L	1		200.8	Total Recoverable
Copper	5.3		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	4000	MB	20	3.7	ug/L	1		200.8	Total Recoverable
Lead	3.2		1.0	0.12	ug/L	1		200.8	Total Recoverable
Manganese	79	MB	1.0	0.41	ug/L	1		200.8	Total Recoverable
Selenium	0.60	J,DX	2.0	0.52	ug/L	1		200.8	Total Recoverable
Zinc	23		20	2.8	ug/L	1		200.8	Total Recoverable
Turbidity	140	BU BV	0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Dissolved Solids	97		10	8.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	92		5.0	4.1	mg/L	1		SM 2540D	Total/NA
Biochemical Oxygen Demand	1.0	J,DX BU BV	2.0	1.0	mg/L	1		SM5210B	Total/NA

Client Sample ID: Outfall011_20230225_Comp_F — Lab Sample ID: 570-129011-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	2.8	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	290	BU	20	3.7	ug/L	1		200.8	Dissolved
Lead	0.20	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Manganese	3.6	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Zinc	4.5	J,DX BU	20	2.8	ug/L	1		200.8	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-1

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: Outfall011_20230225_Comp
Date Collected: 02/25/23 12:20
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129011-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		0.96	0.13	ug/L		02/28/23 05:19	02/28/23 16:34	1
2,4-Dinitrotoluene	ND	LQ	0.19	0.11	ug/L		02/28/23 05:19	02/28/23 16:34	1
Bis(2-ethylhexyl) phthalate	ND		4.8	3.5	ug/L		02/28/23 05:19	02/28/23 16:34	1
N-Nitrosodimethylamine	ND		0.19	0.18	ug/L		02/28/23 05:19	02/28/23 16:34	1
Pentachlorophenol	ND		0.96	0.81	ug/L		02/28/23 05:19	02/28/23 16:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*60*		*31 - 120*	*02/28/23 05:19*	*02/28/23 16:34*	*1*
Phenol-d6 (Surr)	*24*		*10 - 120*	*02/28/23 05:19*	*02/28/23 16:34*	*1*
p-Terphenyl-d14 (Surr)	*74*		*45 - 120*	*02/28/23 05:19*	*02/28/23 16:34*	*1*
2,4,6-Tribromophenol	*79*		*28 - 127*	*02/28/23 05:19*	*02/28/23 16:34*	*1*
2-Fluorophenol	*34*		*17 - 120*	*02/28/23 05:19*	*02/28/23 16:34*	*1*
Nitrobenzene-d5	*68*		*27 - 120*	*02/28/23 05:19*	*02/28/23 16:34*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-1

Method: EPA 608.3 - Organochlorine Pesticides in Water

Client Sample ID: Outfall011_20230225_Comp
Date Collected: 02/25/23 12:20
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129011-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		03/02/23 08:41	03/09/23 16:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*35*	*PI*	*20 - 139*	*03/02/23 08:41*	*03/09/23 16:51*	*1*
DCB Decachlorobiphenyl (Surr)	*24*	*PI*	*20 - 154*	*03/02/23 08:41*	*03/09/23 16:51*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-1

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: Outfall011_20230225_Comp
Date Collected: 02/25/23 12:20
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129011-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2.6		1.0	0.36	mg/L			02/28/23 06:58	1
Nitrite as N	0.060	J,DX BU BV	0.10	0.043	mg/L			02/28/23 06:58	1
Nitrate as N	0.41	BU BV	0.10	0.020	mg/L			02/28/23 06:58	1
Sulfate	5.0		1.0	0.24	mg/L			02/28/23 06:58	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-1

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: Outfall011_20230225_Comp
Date Collected: 02/25/23 12:20
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129011-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			02/28/23 22:35	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-1

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: Outfall011_20230225_Comp
Date Collected: 02/25/23 12:20
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129011-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	0.47		0.10	0.020	mg/L			03/03/23 14:06	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: Outfall011_20230225_Comp
Date Collected: 02/25/23 12:20
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129011-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.13	J,DX	1.0	0.13	ug/L		03/01/23 06:30	03/01/23 11:07	1
Copper	5.3		2.0	0.32	ug/L		03/01/23 06:30	03/01/23 11:07	1
Iron	4000	MB	20	3.7	ug/L		03/01/23 06:30	03/01/23 11:07	1
Lead	3.2		1.0	0.12	ug/L		03/01/23 06:30	03/01/23 11:07	1
Manganese	79	MB	1.0	0.41	ug/L		03/01/23 06:30	03/01/23 11:07	1
Selenium	0.60	J,DX	2.0	0.52	ug/L		03/01/23 06:30	03/01/23 11:07	1
Zinc	23		20	2.8	ug/L		03/01/23 06:30	03/01/23 11:07	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: Outfall011_20230225_Comp_F
Date Collected: 02/25/23 12:20
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129011-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			03/01/23 14:21	1
Copper	**2.8**	**BU**	2.0	0.32	ug/L			03/01/23 14:21	1
Iron	**290**	**BU**	20	3.7	ug/L			03/01/23 14:21	1
Lead	**0.20**	**J,DX BU**	1.0	0.12	ug/L			03/01/23 14:21	1
Manganese	**3.6**	**BU**	1.0	0.41	ug/L			03/01/23 14:21	1
Selenium	ND	BU	2.0	0.52	ug/L			03/01/23 14:21	1
Zinc	**4.5**	**J,DX BU**	20	2.8	ug/L			03/01/23 14:21	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-1

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: Outfall011_20230225_Comp
Date Collected: 02/25/23 12:20
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129011-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/03/23 09:45	03/03/23 13:49	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-1

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: Outfall011_20230225_Comp_F
Date Collected: 02/25/23 12:20
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129011-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	BU	0.20	0.12	ug/L		03/06/23 18:07	03/07/23 13:45	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-1

General Chemistry

Client Sample ID: Outfall011_20230225_Comp
Date Collected: 02/25/23 12:20
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129011-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	ND		0.075	0.032	mg/L		03/08/23 09:40	03/08/23 11:51	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			03/03/23 20:26	1
Turbidity (SM 2130B)	**140**	**BU BV**	0.05	0.05	NTU			02/27/23 22:58	1
Total Dissolved Solids (SM 2540C)	**97**		10	8.7	mg/L			03/02/23 16:19	1
Total Suspended Solids (SM 2540D)	**92**		5.0	4.1	mg/L			03/03/23 18:43	1
MBAS (SM 5540C)	ND	BU BV	0.20	0.050	mg/L		02/27/23 20:28	02/27/23 21:54	1
Biochemical Oxygen Demand (SM5210B)	**1.0**	**J,DX BU BV**	2.0	1.0	mg/L			02/27/23 20:15	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	PHL6	TPHd14	TBP	2FP	NBZ
Lab Sample ID	Client Sample ID	(31-120)	(10-120)	(45-120)	(28-127)	(17-120)	(27-120)
570-129011-1	Outfall011_20230225_Comp	60	24	74	79	34	68
LCS 570-307149/2-A	Lab Control Sample	84	34	106	107	48	76
LCSD 570-307149/3-A	Lab Control Sample Dup	69	31	86	95	44	66
MB 570-307149/1-A	Method Blank	60	29	78	81	42	68

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX2	DCB2
Lab Sample ID	Client Sample ID	(20-139)	(20-154)
570-129011-1	Outfall011_20230225_Comp	35 PI	24 PI

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl (Surr)

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX1	DCB1
Lab Sample ID	Client Sample ID	(20-139)	(20-154)
LCS 570-308323/2-A	Lab Control Sample	46	56
LCSD 570-308323/3-A	Lab Control Sample Dup	63	59
MB 570-308323/1-A	Method Blank	54	52

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-307149/1-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 307149

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		02/27/23 05:32	02/27/23 17:25	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		02/27/23 05:32	02/27/23 17:25	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		02/27/23 05:32	02/27/23 17:25	1
Pentachlorophenol	ND		1.0	0.84	ug/L		02/27/23 05:32	02/27/23 17:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*60*		*31 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
Phenol-d6 (Surr)	*29*		*10 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
p-Terphenyl-d14 (Surr)	*78*		*45 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
2,4,6-Tribromophenol	*81*		*28 - 127*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
2-Fluorophenol	*42*		*17 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
Nitrobenzene-d5	*68*		*27 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*

Lab Sample ID: LCS 570-307149/2-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 307149

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4,6-Trichlorophenol	20.0	21.3		ug/L		107	52 - 129
2,4-Dinitrotoluene	20.0	25.8	LQ	ug/L		129	48 - 127
Bis(2-ethylhexyl) phthalate	20.0	25.7		ug/L		128	29 - 137
N-Nitrosodimethylamine	20.0	9.35		ug/L		47	20 - 120
Pentachlorophenol	20.0	14.9		ug/L		74	38 - 152

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*84*		*31 - 120*
Phenol-d6 (Surr)	*34*		*10 - 120*
p-Terphenyl-d14 (Surr)	*106*		*45 - 120*
2,4,6-Tribromophenol	*107*		*28 - 127*
2-Fluorophenol	*48*		*17 - 120*
Nitrobenzene-d5	*76*		*27 - 120*

Lab Sample ID: LCSD 570-307149/3-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 307149

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4,6-Trichlorophenol	20.0	17.5		ug/L		88	52 - 129	20	35
2,4-Dinitrotoluene	20.0	21.5		ug/L		107	48 - 127	18	25
Bis(2-ethylhexyl) phthalate	20.0	22.7		ug/L		114	29 - 137	12	50
N-Nitrosodimethylamine	20.0	9.77		ug/L		49	20 - 120	4	21
Pentachlorophenol	20.0	12.6		ug/L		63	38 - 152	16	52

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*69*		*31 - 120*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-307149/3-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 307149

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Phenol-d6 (Surr)	*31*		*10 - 120*
p-Terphenyl-d14 (Surr)	*86*		*45 - 120*
2,4,6-Tribromophenol	*95*		*28 - 127*
2-Fluorophenol	*44*		*17 - 120*
Nitrobenzene-d5	*66*		*27 - 120*

Method: 608.3 - Organochlorine Pesticides in Water

Lab Sample ID: MB 570-308323/1-A
Matrix: Water
Analysis Batch: 308567

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 308323

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		03/02/23 08:40	03/03/23 13:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*54*		*20 - 139*	*03/02/23 08:40*	*03/03/23 13:08*	*1*
DCB Decachlorobiphenyl (Surr)	*52*		*20 - 154*	*03/02/23 08:40*	*03/03/23 13:08*	*1*

Lab Sample ID: LCS 570-308323/2-A
Matrix: Water
Analysis Batch: 308567

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 308323

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
alpha-BHC			0.0333	0.0179		ug/L		54	37 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*46*		*20 - 139*
DCB Decachlorobiphenyl (Surr)	*56*		*20 - 154*

Lab Sample ID: LCSD 570-308323/3-A
Matrix: Water
Analysis Batch: 308567

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 308323

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
alpha-BHC			0.0333	0.0205		ug/L		61	37 - 140	13	36

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*63*		*20 - 139*
DCB Decachlorobiphenyl (Surr)	*59*		*20 - 154*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-307534/5
Matrix: Water
Analysis Batch: 307534

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			02/28/23 04:07	1
Nitrate as N	ND		0.10	0.020	mg/L			02/28/23 04:07	1

Lab Sample ID: LCS 570-307534/6
Matrix: Water
Analysis Batch: 307534

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.59		mg/L		103	90 - 110
Nitrate as N	5.00	5.05		mg/L		101	90 - 110

Lab Sample ID: LCSD 570-307534/7
Matrix: Water
Analysis Batch: 307534

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.59		mg/L		103	90 - 110	0	15
Nitrate as N	5.00	5.02		mg/L		100	90 - 110	0	15

Lab Sample ID: MB 570-307535/5
Matrix: Water
Analysis Batch: 307535

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			02/28/23 04:07	1
Sulfate	ND		1.0	0.24	mg/L			02/28/23 04:07	1

Lab Sample ID: LCS 570-307535/6
Matrix: Water
Analysis Batch: 307535

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	50.2		mg/L		100	90 - 110
Sulfate	50.0	49.7		mg/L		99	90 - 110

Lab Sample ID: LCSD 570-307535/7
Matrix: Water
Analysis Batch: 307535

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	50.2		mg/L		100	90 - 110	0	15
Sulfate	50.0	49.6		mg/L		99	90 - 110	0	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-307808/7
Matrix: Water
Analysis Batch: 307808

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			02/28/23 19:27	1

Lab Sample ID: LCS 570-307808/8
Matrix: Water
Analysis Batch: 307808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	24.2		ug/L		97	85 - 115

Lab Sample ID: LCSD 570-307808/9
Matrix: Water
Analysis Batch: 307808

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	24.1		ug/L		96	85 - 115	0	15

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-307908/1-A
Matrix: Water
Analysis Batch: 308055

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 307908

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		03/01/23 06:30	03/01/23 10:48	1
Copper	ND		2.0	0.32	ug/L		03/01/23 06:30	03/01/23 10:48	1
Iron	3.80	J,DX	20	3.7	ug/L		03/01/23 06:30	03/01/23 10:48	1
Lead	ND		1.0	0.12	ug/L		03/01/23 06:30	03/01/23 10:48	1
Manganese	0.591	J,DX	1.0	0.41	ug/L		03/01/23 06:30	03/01/23 10:48	1
Selenium	ND		2.0	0.52	ug/L		03/01/23 06:30	03/01/23 10:48	1
Zinc	ND		20	2.8	ug/L		03/01/23 06:30	03/01/23 10:48	1

Lab Sample ID: LCS 570-307908/2-A
Matrix: Water
Analysis Batch: 308055

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 307908

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	77.6		ug/L		97	85 - 115
Copper	80.0	75.9		ug/L		95	85 - 115
Iron	800	825		ug/L		103	85 - 115
Lead	80.0	76.9		ug/L		96	85 - 115
Manganese	80.0	80.1		ug/L		100	85 - 115
Selenium	80.0	77.6		ug/L		97	85 - 115
Zinc	80.0	76.6		ug/L		96	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-307908/3-A
Matrix: Water
Analysis Batch: 308055

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 307908

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium			80.0	77.0		ug/L		96	85 - 115	1	20
Copper			80.0	76.3		ug/L		95	85 - 115	1	20
Iron			800	814		ug/L		102	85 - 115	1	20
Lead			80.0	78.0		ug/L		97	85 - 115	1	20
Manganese			80.0	79.7		ug/L		100	85 - 115	0	20
Selenium			80.0	74.8		ug/L		93	85 - 115	4	20
Zinc			80.0	77.1		ug/L		96	85 - 115	1	20

Lab Sample ID: MB 570-308039/1-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L			03/01/23 14:16	1
Copper	ND		2.0	0.32	ug/L			03/01/23 14:16	1
Iron	ND		20	3.7	ug/L			03/01/23 14:16	1
Lead	ND		1.0	0.12	ug/L			03/01/23 14:16	1
Manganese	ND		1.0	0.41	ug/L			03/01/23 14:16	1
Selenium	ND		2.0	0.52	ug/L			03/01/23 14:16	1
Zinc	ND		20	2.8	ug/L			03/01/23 14:16	1

Lab Sample ID: LCS 570-308039/2-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cadmium			80.0	80.0		ug/L		100	85 - 115		
Copper			80.0	77.6		ug/L		97	85 - 115		
Iron			800	814		ug/L		102	85 - 115		
Lead			80.0	80.3		ug/L		100	85 - 115		
Manganese			80.0	81.3		ug/L		102	85 - 115		
Selenium			80.0	82.2		ug/L		103	85 - 115		
Zinc			80.0	78.5		ug/L		98	85 - 115		

Lab Sample ID: LCSD 570-308039/3-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium			80.0	80.5		ug/L		101	85 - 115	1	20
Copper			80.0	78.2		ug/L		98	85 - 115	1	20
Iron			800	814		ug/L		102	85 - 115	0	20
Lead			80.0	80.5		ug/L		101	85 - 115	0	20
Manganese			80.0	81.5		ug/L		102	85 - 115	0	20
Selenium			80.0	83.1		ug/L		104	85 - 115	1	20
Zinc			80.0	81.1		ug/L		101	85 - 115	3	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-308182/1-A
Matrix: Water
Analysis Batch: 308434
Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 308182

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/01/23 18:22	03/02/23 11:55	1

Lab Sample ID: LCS 570-308182/2-A
Matrix: Water
Analysis Batch: 308434
Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 308182

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	8.18		ug/L		102	85 - 115

Lab Sample ID: LCSD 570-308182/3-A
Matrix: Water
Analysis Batch: 308434
Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 308182

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	8.00	8.08		ug/L		101	85 - 115	1	10

Lab Sample ID: MB 570-308521/1-A
Matrix: Water
Analysis Batch: 308860
Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 308521

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/03/23 09:45	03/03/23 13:30	1

Lab Sample ID: LCS 570-308521/2-A
Matrix: Water
Analysis Batch: 308860
Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 308521

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	8.47		ug/L		106	85 - 115

Lab Sample ID: LCSD 570-308521/3-A
Matrix: Water
Analysis Batch: 308860
Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 308521

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	8.00	8.54		ug/L		107	85 - 115	1	10

Lab Sample ID: MB 570-309367/1-B
Matrix: Water
Analysis Batch: 309665
Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 309368

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/06/23 18:07	03/07/23 13:11	1

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 570-309367/2-B
Matrix: Water
Analysis Batch: 309665

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 309368

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	8.47		ug/L		106	85 - 115

Lab Sample ID: LCSD 570-309367/3-B
Matrix: Water
Analysis Batch: 309665

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 309368

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	8.00	8.40		ug/L		105	85 - 115	1	10

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-309909/5-A
Matrix: Water
Analysis Batch: 309958

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 309909

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		03/08/23 09:40	03/08/23 11:21	1

Lab Sample ID: LCS 570-309909/6-A
Matrix: Water
Analysis Batch: 309958

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 309909

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	0.500	0.483		mg/L		97	90 - 110

Lab Sample ID: LCSD 570-309909/7-A
Matrix: Water
Analysis Batch: 309958

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 309909

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	0.500	0.488		mg/L		98	90 - 110	1	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-309199/12
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			03/03/23 20:26	1

Lab Sample ID: LCS 570-309199/13
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	229		ug/L		92	90 - 110

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate (Continued)

Lab Sample ID: LCSD 570-309199/15
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	250	231		ug/L		92	90 - 110	1	20

Lab Sample ID: MRL 570-309199/11
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	5.41		ug/L		108	50 - 150

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-307521/3
Matrix: Water
Analysis Batch: 307521

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-308507/1
Matrix: Water
Analysis Batch: 308507

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			03/02/23 16:18	1

Lab Sample ID: LCS 570-308507/2
Matrix: Water
Analysis Batch: 308507

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	944		mg/L		94	84 - 108

Lab Sample ID: LCSD 570-308507/3
Matrix: Water
Analysis Batch: 308507

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	992		mg/L		99	84 - 108	5	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-308912/1
Matrix: Water
Analysis Batch: 308912

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			03/03/23 18:43	1

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: LCS 570-308912/2
Matrix: Water
Analysis Batch: 308912

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	96.0		mg/L		96	77 - 116		

Lab Sample ID: LCSD 570-308912/3
Matrix: Water
Analysis Batch: 308912

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	96.0		mg/L		96	77 - 116	0	10

Lab Sample ID: 570-129011-1 DU
Matrix: Water
Analysis Batch: 308912

Client Sample ID: Outfall011_20230225_Comp
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	92			90.0		mg/L				2	10

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-307522/5-A
Matrix: Water
Analysis Batch: 307520

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 307522

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.20	0.050	mg/L		02/27/23 20:28	02/27/23 21:49	1

Lab Sample ID: LCS 570-307522/6-A
Matrix: Water
Analysis Batch: 307520

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 307522

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
MBAS			0.500	0.546		mg/L		109	83 - 122		

Lab Sample ID: LCSD 570-307522/7-A
Matrix: Water
Analysis Batch: 307520

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 307522

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS			0.500	0.538		mg/L		108	83 - 122	1	10

Method: SM5210B - BOD, 5 Day

Lab Sample ID: USB 570-309219/2
Matrix: Water
Analysis Batch: 309219

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L			02/27/23 11:01	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-1

Method: SM5210B - BOD, 5 Day (Continued)

Lab Sample ID: LCS 570-309219/4
Matrix: Water
Analysis Batch: 309219

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Biochemical Oxygen Demand			199	201		mg/L		101	84.6 - 115.4		

GC/MS Semi VOA

Prep Batch: 307149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	625	
MB 570-307149/1-A	Method Blank	Total/NA	Water	625	
LCS 570-307149/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-307149/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 307279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-307149/1-A	Method Blank	Total/NA	Water	625.1 SIM	307149
LCS 570-307149/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	307149
LCSD 570-307149/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	307149

Analysis Batch: 307608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	625.1 SIM	307149

GC Semi VOA

Prep Batch: 308323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	608	
MB 570-308323/1-A	Method Blank	Total/NA	Water	608	
LCS 570-308323/2-A	Lab Control Sample	Total/NA	Water	608	
LCSD 570-308323/3-A	Lab Control Sample Dup	Total/NA	Water	608	

Analysis Batch: 308567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-308323/1-A	Method Blank	Total/NA	Water	608.3	308323
LCS 570-308323/2-A	Lab Control Sample	Total/NA	Water	608.3	308323
LCSD 570-308323/3-A	Lab Control Sample Dup	Total/NA	Water	608.3	308323

Analysis Batch: 310111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	608.3	308323

HPLC/IC

Analysis Batch: 307534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	300.0	
MB 570-307534/5	Method Blank	Total/NA	Water	300.0	
LCS 570-307534/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-307534/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 307535

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	300.0	
MB 570-307535/5	Method Blank	Total/NA	Water	300.0	
LCS 570-307535/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-307535/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-1

HPLC/IC

Analysis Batch: 307808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	314.0	
MB 570-307808/7	Method Blank	Total/NA	Water	314.0	
LCS 570-307808/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-307808/9	Lab Control Sample Dup	Total/NA	Water	314.0	

Analysis Batch: 308826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	NO2NO3 Calc	

Metals

Prep Batch: 307908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total Recoverable	Water	200.8	
MB 570-307908/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-307908/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-307908/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	

Filtration Batch: 308039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-3	Outfall011_20230225_Comp_F	Dissolved	Water	Filtration	
MB 570-308039/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-308039/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-308039/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 308055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total Recoverable	Water	200.8	307908
MB 570-307908/1-A	Method Blank	Total Recoverable	Water	200.8	307908
LCS 570-307908/2-A	Lab Control Sample	Total Recoverable	Water	200.8	307908
LCSD 570-307908/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	307908

Analysis Batch: 308099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-3	Outfall011_20230225_Comp_F	Dissolved	Water	200.8	308039

Analysis Batch: 308100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-308039/1-A	Method Blank	Dissolved	Water	200.8	308039
LCS 570-308039/2-A	Lab Control Sample	Dissolved	Water	200.8	308039
LCSD 570-308039/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	308039

Prep Batch: 308182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-308182/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-308182/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-308182/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	

Metals

Analysis Batch: 308434

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-308182/1-A	Method Blank	Total/NA	Water	245.1	308182
LCS 570-308182/2-A	Lab Control Sample	Total/NA	Water	245.1	308182
LCSD 570-308182/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	308182

Prep Batch: 308521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	245.1	
MB 570-308521/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-308521/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-308521/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	

Analysis Batch: 308860

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	245.1	308521
MB 570-308521/1-A	Method Blank	Total/NA	Water	245.1	308521
LCS 570-308521/2-A	Lab Control Sample	Total/NA	Water	245.1	308521
LCSD 570-308521/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	308521

Filtration Batch: 309367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-3	Outfall011_20230225_Comp_F	Dissolved	Water	Filtration	
MB 570-309367/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-309367/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-309367/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	

Prep Batch: 309368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-3	Outfall011_20230225_Comp_F	Dissolved	Water	245.1	309367
MB 570-309367/1-B	Method Blank	Dissolved	Water	245.1	309367
LCS 570-309367/2-B	Lab Control Sample	Dissolved	Water	245.1	309367
LCSD 570-309367/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	309367

Analysis Batch: 309665

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-3	Outfall011_20230225_Comp_F	Dissolved	Water	245.1	309368
MB 570-309367/1-B	Method Blank	Dissolved	Water	245.1	309368
LCS 570-309367/2-B	Lab Control Sample	Dissolved	Water	245.1	309368
LCSD 570-309367/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	309368

General Chemistry

Analysis Batch: 307520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	SM 5540C	307522
MB 570-307522/5-A	Method Blank	Total/NA	Water	SM 5540C	307522
LCS 570-307522/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	307522
LCSD 570-307522/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	307522

General Chemistry

Analysis Batch: 307521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	SM 2130B	
LCSSRM 570-307521/3	Lab Control Sample	Total/NA	Water	SM 2130B	

Prep Batch: 307522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	SM 5540C	
MB 570-307522/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-307522/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-307522/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	

Analysis Batch: 308507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	SM 2540C	
MB 570-308507/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-308507/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-308507/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 308912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	SM 2540D	
MB 570-308912/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-308912/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-308912/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-129011-1 DU	Outfall011_20230225_Comp	Total/NA	Water	SM 2540D	

Analysis Batch: 309199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	Kelada 01	
MB 570-309199/12	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-309199/13	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-309199/15	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-309199/11	Lab Control Sample	Total/NA	Water	Kelada 01	

Analysis Batch: 309219

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	SM5210B	
USB 570-309219/2	Method Blank	Total/NA	Water	SM5210B	
LCS 570-309219/4	Lab Control Sample	Total/NA	Water	SM5210B	

Prep Batch: 309909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	Distill/Ammonia	
MB 570-309909/5-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-309909/6-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-309909/7-A	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 309958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	350.1	309909
MB 570-309909/5-A	Method Blank	Total/NA	Water	350.1	309909

General Chemistry (Continued)

Analysis Batch: 309958 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-309909/6-A	Lab Control Sample	Total/NA	Water	350.1	309909
LCSD 570-309909/7-A	Lab Control Sample Dup	Total/NA	Water	350.1	309909

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-1

Client Sample ID: Outfall011_20230225_Comp

Date Collected: 02/25/23 12:20
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129011-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			1039.5 mL	2 mL	307149	02/28/23 05:19	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	307608	02/28/23 16:34	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Prep	608			1500 mL	1 mL	308323	03/02/23 08:41	OAJ3	EET CAL 4
Total/NA	Analysis	608.3		1	1 mL	1 mL	310111	03/09/23 16:51	N5Y3	EET CAL 4
	Instrument ID: GC52A									
Total/NA	Analysis	300.0		1	4 mL	4 mL	307534	02/28/23 06:58	PS	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	300.0		1	4 mL	4 mL	307535	02/28/23 06:58	PS	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	314.0		1	4 mL	4 mL	307808	02/28/23 22:35	PS	EET CAL 4
	Instrument ID: IC8									
Total/NA	Analysis	NO2NO3 Calc		1			308826	03/03/23 14:06	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total Recoverable	Prep	200.8			50 mL	50 mL	307908	03/01/23 06:30	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			308055	03/01/23 11:07	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Prep	245.1			25 mL	50 mL	308521	03/03/23 09:45	C0YH	EET CAL 4
Total/NA	Analysis	245.1		1			308860	03/03/23 13:49	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	309909	03/08/23 09:40	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	309958	03/08/23 11:51	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	309199	03/03/23 20:26	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			307521	02/27/23 22:58	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	308507	03/02/23 16:19	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	200 mL	1000 mL	308912	03/03/23 18:43	BDH9	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Prep	SM 5540C			100 mL	100 mL	307522	02/27/23 20:28	TXA8	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	307520	02/27/23 21:54	TXA8	EET CAL 4
	Instrument ID: UV8									
Total/NA	Analysis	SM5210B		1			309219	02/27/23 20:15	U7UR	EET CAL 4
	Instrument ID: BOD3									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-129011-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Client Sample ID: Outfall011_20230225_Comp_F
Lab Sample ID: 570-129011-3

Date Collected: 02/25/23 12:20
Matrix: Water
Date Received: 02/27/23 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	308039	03/01/23 12:58	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			308099	03/01/23 14:21	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Dissolved	Filtration	Filtration			25 mL	25 mL	309367	03/06/23 17:48	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	309368	03/06/23 18:07	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			309665	03/07/23 13:45	C0YH	EET CAL 4
	Instrument ID: HG8									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129011-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-1

Method	Method Description	Protocol	Laboratory
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
608.3	Organochlorine Pesticides in Water	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
SM5210B	BOD, 5 Day	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
608	Liquid-Liquid Extraction (Separatory Funnel)	EPA	EET CAL 4
625	Liquid-Liquid Extraction	EPA	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129011-1	Outfall011_20230225_Comp	Water	02/25/23 12:20	02/27/23 18:00
570-129011-3	Outfall011_20230225_Comp_F	Water	02/25/23 12:20	02/27/23 18:00

129011

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-129011 Chain of Custody

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011 018] Outfall 011 Comp
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue Suite #100 Tustin, CA 92780 Tel. 714-895-5494 **ECI Project #57013187**	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Project Manager:** Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	**Field Manager:** Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED														
									R	R	R	R	R	R	R	R	R	R	R	C		
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals (E200.8) Zn (E200.8) Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl- SO_4, Nitrate-N Nitrite-N NO3+NO2-N Perchlorate (E300)	Turbidity TDS (SM2540C/E160.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)	Total Recoverable Metals (E200.8) Mn, Fe			Comments
Outfall 011	Outfall011_20230225_Comp	2/25/2023 1220	WM	500 mL Poly	1	HNO_3	90	Yes	X										X	X			Outfall 011 analyze for Mn and Fe.
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	1L Poly	1	None	115	No			X												
			WM	500 mL Poly	2	None	120	No				X											
			WM	500 mL Poly	2	None	130	No					X										48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X									48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X							
			WM	1 L Glass Amber	2	None	170	No									X						
			WM	1 L Glass Amber	2	None	180	No										X					
			WM	1L Poly	1	None	185	No							X								
	Outfall011_20230225_Comp_Extra	2/25/2023 1220	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	500 mL Poly	2	None	120	No				H											Hold
			WM	500 mL Poly	2	None	130	No					H										Hold
			WM	1 L Glass Amber	2	None	170	No									H						Hold
			WM	1 L Glass Amber	2	None	180	No										H					Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	2.27.2023/1120	H&A	[signature]	2/27/23 1120 EC
[signature]	2/27/23 1800	EC	[signature] EC	2-27-23 18'00

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: __X__

2.6/2.5, 3.0/2.9 SC12

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3/22/2023

2019-2020 Rainy Season
Version 4

129011

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:	ANALYSIS REQUIRED
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp	
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel 714-895-5494 **ECI Project #57013187**		
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606 520.904.6944 (cell)	
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R: Total Dissolved Metals. (E200.8) Zn (E200.8) Cu, Pb, Cd, Se	R: Cyanide (SM4500-CN-E / E335.2)	R: Gross Alpha(E900.0) Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R: Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	R: Total Dissolved Metals. Mercury (E245.1)	C: Total Dissolved Metals (E200.8): Mn, Fe	Comments
Outfall 011	Outfall011_20230225_Comp_F	2/25/2023 1220	WM	1L Poly	1	None	200	Yes	X					Filter and preserve w/in 24hrs of receipt at lab. Outfall 011 analyze for Mn and Fe.
			WM	borosilicate vials	1	None	320	No					X	Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall011_20230225_Comp	2/25/2023 1220	WM	500 mL Poly	1	NaOH	220	No		X				
			WM	2.5 Gal Cube	1	None	225	No			X			Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No						
			WM	1 Gal Cube	6	None	235	No				X		Only test if first or second rain events of the year Deliver to ABC Labs in Ventura, CA.

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	2-27-2023/1120	H.A	[signature]	2/27/23 1120 EC
[signature]	2/27/23 1800	EC	[signature]	EC 2-27-23 18:00
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

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3/22/2023

2019-2020 Rainy Season
Version 4

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129011-1

Login Number: 129011
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/22/2023 11:46:00 AM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall 011 - Comp

JOB NUMBER

570-129011-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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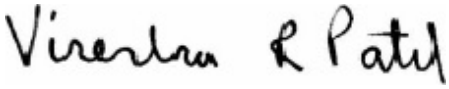
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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3/22/2023 11:46:00 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client: Haley & Aldrich, Inc. Job ID: 570-129011-2
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129011-2

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.5º C and 2.9º C.

Dioxin
Method 1613B: The automated ending resolution check scheduled to be performed on March 20, 2023 at approximately 22:23 did not print. A manual resolution check was performed, without retuning, at the end of the second sequence on March 21, 2023 at 10:21, which indicated that the instrument maintained 10,000 resolution. The approximately 12 hour delay in printing the ending resolution check has no impact on the data.

Outfall011_20230225_Comp (570-129011-1), (CCV 320-662109/2), (LCS 320-659338/2-A), (LCSD 320-659338/3-A), (MB 320-659338/1-A) and (WDM 320-662109/1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-2

Client Sample ID: Outfall011_20230225_Comp

Lab Sample ID: 570-129011-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	0.0000022	J,DX q MB	0.000048	0.00000052	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000037	J,DX q MB	0.000048	0.00000051	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000027	J,DX	0.000048	0.00000046	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000012	J,DX q	0.000048	0.00000039	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000011	J,DX q	0.000048	0.00000037	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000013	J,DX MB	0.000048	0.00000037	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000095	J,DX q	0.000048	0.00000035	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.00011	MB	0.000048	0.0000020	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000025	J,DX MB	0.000048	0.00000078	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000018	J,DX	0.000048	0.00000082	ug/L	1		1613B	Total/NA
OCDD	0.0025	MB	0.000096	0.0000041	ug/L	1		1613B	Total/NA
OCDF	0.000052	J,DX MB	0.000096	0.00000055	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000021	J,DX q	0.000048	0.00000026	ug/L	1		1613B	Total/NA
Total HxCDD	0.000021	J,DX q MB	0.000048	0.00000050	ug/L	1		1613B	Total/NA
Total HxCDF	0.000021	J,DX q MB	0.000048	0.00000037	ug/L	1		1613B	Total/NA
Total HpCDD	0.00021	MB	0.000048	0.0000020	ug/L	1		1613B	Total/NA
Total HpCDF	0.000057	MB	0.000048	0.00000080	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: Outfall011_20230225_Comp
Date Collected: 02/25/23 12:20
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129011-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000096	0.00000078	ug/L		03/09/23 04:30	03/20/23 17:39	1
2,3,7,8-TCDF	ND		0.0000096	0.00000035	ug/L		03/09/23 04:30	03/20/23 17:39	1
1,2,3,7,8-PeCDD	ND		0.000048	0.00000042	ug/L		03/09/23 04:30	03/20/23 17:39	1
1,2,3,7,8-PeCDF	ND		0.000048	0.00000025	ug/L		03/09/23 04:30	03/20/23 17:39	1
2,3,4,7,8-PeCDF	ND		0.000048	0.00000027	ug/L		03/09/23 04:30	03/20/23 17:39	1
1,2,3,4,7,8-HxCDD	**0.0000022**	**J,DX q MB**	0.000048	0.00000052	ug/L		03/09/23 04:30	03/20/23 17:39	1
1,2,3,6,7,8-HxCDD	**0.0000037**	**J,DX q MB**	0.000048	0.00000051	ug/L		03/09/23 04:30	03/20/23 17:39	1
1,2,3,7,8,9-HxCDD	**0.0000027**	**J,DX**	0.000048	0.00000046	ug/L		03/09/23 04:30	03/20/23 17:39	1
1,2,3,4,7,8-HxCDF	**0.0000012**	**J,DX q**	0.000048	0.00000039	ug/L		03/09/23 04:30	03/20/23 17:39	1
1,2,3,6,7,8-HxCDF	**0.0000011**	**J,DX q**	0.000048	0.00000037	ug/L		03/09/23 04:30	03/20/23 17:39	1
1,2,3,7,8,9-HxCDF	**0.0000013**	**J,DX MB**	0.000048	0.00000037	ug/L		03/09/23 04:30	03/20/23 17:39	1
2,3,4,6,7,8-HxCDF	**0.00000095**	**J,DX q**	0.000048	0.00000035	ug/L		03/09/23 04:30	03/20/23 17:39	1
1,2,3,4,6,7,8-HpCDD	**0.00011**	**MB**	0.000048	0.0000020	ug/L		03/09/23 04:30	03/20/23 17:39	1
1,2,3,4,6,7,8-HpCDF	**0.000025**	**J,DX MB**	0.000048	0.00000078	ug/L		03/09/23 04:30	03/20/23 17:39	1
1,2,3,4,7,8,9-HpCDF	**0.0000018**	**J,DX**	0.000048	0.00000082	ug/L		03/09/23 04:30	03/20/23 17:39	1
OCDD	**0.0025**	**MB**	0.000096	0.0000041	ug/L		03/09/23 04:30	03/20/23 17:39	1
OCDF	**0.000052**	**J,DX MB**	0.000096	0.00000055	ug/L		03/09/23 04:30	03/20/23 17:39	1
Total TCDD	ND		0.0000096	0.00000078	ug/L		03/09/23 04:30	03/20/23 17:39	1
Total TCDF	ND		0.0000096	0.00000035	ug/L		03/09/23 04:30	03/20/23 17:39	1
Total PeCDD	ND		0.000048	0.00000042	ug/L		03/09/23 04:30	03/20/23 17:39	1
Total PeCDF	**0.0000021**	**J,DX q**	0.000048	0.00000026	ug/L		03/09/23 04:30	03/20/23 17:39	1
Total HxCDD	**0.000021**	**J,DX q MB**	0.000048	0.00000050	ug/L		03/09/23 04:30	03/20/23 17:39	1
Total HxCDF	**0.000021**	**J,DX q MB**	0.000048	0.00000037	ug/L		03/09/23 04:30	03/20/23 17:39	1
Total HpCDD	**0.00021**	**MB**	0.000048	0.0000020	ug/L		03/09/23 04:30	03/20/23 17:39	1
Total HpCDF	**0.000057**	**MB**	0.000048	0.00000080	ug/L		03/09/23 04:30	03/20/23 17:39	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*81*		*25 - 164*	*03/09/23 04:30*	*03/20/23 17:39*	*1*
13C-2,3,7,8-TCDF	*74*		*24 - 169*	*03/09/23 04:30*	*03/20/23 17:39*	*1*
13C-1,2,3,7,8-PeCDD	*102*		*25 - 181*	*03/09/23 04:30*	*03/20/23 17:39*	*1*
13C-1,2,3,7,8-PeCDF	*88*		*24 - 185*	*03/09/23 04:30*	*03/20/23 17:39*	*1*
13C-2,3,4,7,8-PeCDF	*90*		*21 - 178*	*03/09/23 04:30*	*03/20/23 17:39*	*1*
13C-1,2,3,4,7,8-HxCDD	*85*		*32 - 141*	*03/09/23 04:30*	*03/20/23 17:39*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: Outfall011_20230225_Comp
Lab Sample ID: 570-129011-1
Date Collected: 02/25/23 12:20
Matrix: Water
Date Received: 02/27/23 18:00

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,6,7,8-HxCDD	80		28 - 130	03/09/23 04:30	03/20/23 17:39	1
13C-1,2,3,4,7,8-HxCDF	70		26 - 152	03/09/23 04:30	03/20/23 17:39	1
13C-1,2,3,6,7,8-HxCDF	76		26 - 123	03/09/23 04:30	03/20/23 17:39	1
13C-1,2,3,7,8,9-HxCDF	82		29 - 147	03/09/23 04:30	03/20/23 17:39	1
13C-2,3,4,6,7,8-HxCDF	79		28 - 136	03/09/23 04:30	03/20/23 17:39	1
13C-1,2,3,4,6,7,8-HpCDD	98		23 - 140	03/09/23 04:30	03/20/23 17:39	1
13C-1,2,3,4,6,7,8-HpCDF	81		28 - 143	03/09/23 04:30	03/20/23 17:39	1
13C-1,2,3,4,7,8,9-HpCDF	91		26 - 138	03/09/23 04:30	03/20/23 17:39	1
13C-OCDD	97		17 - 157	03/09/23 04:30	03/20/23 17:39	1
13C-OCDF	89		17 - 157	03/09/23 04:30	03/20/23 17:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	85		35 - 197	03/09/23 04:30	03/20/23 17:39	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-129011-1	Outfall011_20230225_Comp	85
MB 320-659338/1-A	Method Blank	84

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-659338/2-A	Lab Control Sample	85
LCSD 320-659338/3-A	Lab Control Sample Dup	86

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-129011-1	Outfall011_20230225_Comp	81	74	102	88	90	85	80	70
MB 320-659338/1-A	Method Blank	71	62	90	77	78	70	72	59

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-129011-1	Outfall011_20230225_Comp	76	82	79	98	81	91	97	89
MB 320-659338/1-A	Method Blank	65	71	69	88	71	81	89	80

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-659338/2-A	Lab Control Sample	65	58	83	71	70	63	62	51
LCSD 320-659338/3-A	Lab Control Sample Dup	77	70	96	82	84	72	68	57

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-659338/2-A	Lab Control Sample	56	65	61	78	63	72	78	71
LCSD 320-659338/3-A	Lab Control Sample Dup	64	75	71	91	71	84	93	84

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129011-2
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-659338/1-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 659338

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000097	ug/L		03/09/23 04:30	03/20/23 13:41	1
2,3,7,8-TCDF	ND		0.000010	0.00000055	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000045	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,7,8-PeCDF	ND		0.000050	0.00000037	ug/L		03/09/23 04:30	03/20/23 13:41	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000042	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,7,8-HxCDD	0.00000174	J,DX	0.000050	0.00000028	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,6,7,8-HxCDD	0.000000455	J,DX q	0.000050	0.00000029	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.00000025	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.00000028	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000026	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,7,8,9-HxCDF	0.000000967	J,DX	0.000050	0.00000026	ug/L		03/09/23 04:30	03/20/23 13:41	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.00000024	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,6,7,8-HpCDD	0.00000104	J,DX q	0.000050	0.00000024	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,6,7,8-HpCDF	0.00000126	J,DX	0.000050	0.00000029	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.00000032	ug/L		03/09/23 04:30	03/20/23 13:41	1
OCDD	0.0000112	J,DX	0.00010	0.00000031	ug/L		03/09/23 04:30	03/20/23 13:41	1
OCDF	0.00000213	J,DX q	0.00010	0.00000039	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total TCDD	ND		0.000010	0.00000097	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total TCDF	ND		0.000010	0.00000055	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total PeCDD	ND		0.000050	0.00000045	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total PeCDF	ND		0.000050	0.00000042	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total HxCDD	0.00000263	J,DX q	0.000050	0.00000028	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total HxCDF	0.000000967	J,DX	0.000050	0.00000026	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total HpCDD	0.00000272	J,DX q	0.000050	0.00000024	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total HpCDF	0.00000126	J,DX	0.000050	0.00000031	ug/L		03/09/23 04:30	03/20/23 13:41	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*71*		*25 - 164*	*03/09/23 04:30*	*03/20/23 13:41*	*1*
13C-2,3,7,8-TCDF	*62*		*24 - 169*	*03/09/23 04:30*	*03/20/23 13:41*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-659338/1-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 659338

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDD	90		25 - 181	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,7,8-PeCDF	77		24 - 185	03/09/23 04:30	03/20/23 13:41	1
13C-2,3,4,7,8-PeCDF	78		21 - 178	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,7,8-HxCDD	70		32 - 141	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,6,7,8-HxCDD	72		28 - 130	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,7,8-HxCDF	59		26 - 152	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,6,7,8-HxCDF	65		26 - 123	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,7,8,9-HxCDF	71		29 - 147	03/09/23 04:30	03/20/23 13:41	1
13C-2,3,4,6,7,8-HxCDF	69		28 - 136	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,6,7,8-HpCDD	88		23 - 140	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,6,7,8-HpCDF	71		28 - 143	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,7,8,9-HpCDF	81		26 - 138	03/09/23 04:30	03/20/23 13:41	1
13C-OCDD	89		17 - 157	03/09/23 04:30	03/20/23 13:41	1
13C-OCDF	80		17 - 157	03/09/23 04:30	03/20/23 13:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	84		35 - 197	03/09/23 04:30	03/20/23 13:41	1

Lab Sample ID: LCS 320-659338/2-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 659338

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000186		ug/L		93	67 - 158
2,3,7,8-TCDF	0.000200	0.000212		ug/L		106	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.000901		ug/L		90	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.000947		ug/L		95	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000953		ug/L		95	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.000912		ug/L		91	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000959		ug/L		96	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000963		ug/L		96	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.000953		ug/L		95	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000956		ug/L		96	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.000924		ug/L		92	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000948		ug/L		95	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.000934		ug/L		93	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.000984		ug/L		98	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000935		ug/L		94	78 - 138
OCDD	0.00200	0.00191		ug/L		96	78 - 144
OCDF	0.00200	0.00195		ug/L		97	63 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	65		20 - 175
13C-2,3,7,8-TCDF	58		22 - 152
13C-1,2,3,7,8-PeCDD	83		21 - 227
13C-1,2,3,7,8-PeCDF	71		21 - 192
13C-2,3,4,7,8-PeCDF	70		13 - 328

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-659338/2-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 659338

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCDD	63		21 - 193
13C-1,2,3,6,7,8-HxCDD	62		25 - 163
13C-1,2,3,4,7,8-HxCDF	51		19 - 202
13C-1,2,3,6,7,8-HxCDF	56		21 - 159
13C-1,2,3,7,8,9-HxCDF	65		17 - 205
13C-2,3,4,6,7,8-HxCDF	61		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	78		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	63		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	72		20 - 186
13C-OCDD	78		13 - 199
13C-OCDF	71		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	85		31 - 191

Lab Sample ID: LCSD 320-659338/3-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 659338

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000197		ug/L		98	67 - 158	6	50
2,3,7,8-TCDF			0.000200	0.000218		ug/L		109	75 - 158	3	50
1,2,3,7,8-PeCDD			0.00100	0.000927		ug/L		93	70 - 142	3	50
1,2,3,7,8-PeCDF			0.00100	0.000974		ug/L		97	80 - 134	3	50
2,3,4,7,8-PeCDF			0.00100	0.000961		ug/L		96	68 - 160	1	50
1,2,3,4,7,8-HxCDD			0.00100	0.000919		ug/L		92	70 - 164	1	50
1,2,3,6,7,8-HxCDD			0.00100	0.00100		ug/L		100	76 - 134	4	50
1,2,3,7,8,9-HxCDD			0.00100	0.00101		ug/L		101	64 - 162	4	50
1,2,3,4,7,8-HxCDF			0.00100	0.000989		ug/L		99	72 - 134	4	50
1,2,3,6,7,8-HxCDF			0.00100	0.000954		ug/L		95	84 - 130	0	50
1,2,3,7,8,9-HxCDF			0.00100	0.000953		ug/L		95	78 - 130	3	50
2,3,4,6,7,8-HxCDF			0.00100	0.000958		ug/L		96	70 - 156	1	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000942		ug/L		94	70 - 140	1	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.000988		ug/L		99	82 - 122	0	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000957		ug/L		96	78 - 138	2	50
OCDD			0.00200	0.00195		ug/L		97	78 - 144	2	50
OCDF			0.00200	0.00199		ug/L		99	63 - 170	2	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	77		20 - 175
13C-2,3,7,8-TCDF	70		22 - 152
13C-1,2,3,7,8-PeCDD	96		21 - 227
13C-1,2,3,7,8-PeCDF	82		21 - 192
13C-2,3,4,7,8-PeCDF	84		13 - 328
13C-1,2,3,4,7,8-HxCDD	72		21 - 193
13C-1,2,3,6,7,8-HxCDD	68		25 - 163
13C-1,2,3,4,7,8-HxCDF	57		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-659338/3-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 659338

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	64		21 - 159
13C-1,2,3,7,8,9-HxCDF	75		17 - 205
13C-2,3,4,6,7,8-HxCDF	71		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	91		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	71		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	84		20 - 186
13C-OCDD	93		13 - 199
13C-OCDF	84		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	86		31 - 191

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129011-2
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Specialty Organics

Prep Batch: 659338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	1613B	
MB 320-659338/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-659338/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-659338/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 662109

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	1613B	659338
MB 320-659338/1-A	Method Blank	Total/NA	Water	1613B	659338
LCS 320-659338/2-A	Lab Control Sample	Total/NA	Water	1613B	659338
LCSD 320-659338/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	659338

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-2

Client Sample ID: Outfall011_20230225_Comp
Date Collected: 02/25/23 12:20
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129011-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			1045.2 mL	20.0 uL	659338	03/09/23 04:30	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	662109	03/20/23 17:39	DB	EET SAC
	Instrument ID: 12D5									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129011-2
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-24
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	02-28-26
Utah	NELAP	CA000442021-12	02-28-23 *
Virginia	NELAP	460278	03-14-23 *
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-2

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129011-1	Outfall011_20230225_Comp	Water	02/25/23 12:20	02/27/23 18:00

129011

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-129011 Chain of Custody

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011 018] Outfall 011 Comp
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue Suite #100 Tustin, CA 92780 Tel. 714-895-5494 **ECI Project #57013187**	**Project Manager:** Katherine Miller 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Field Manager:** Mark Dominick 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

									ANALYSIS REQUIRED															
									R	R	R	R	R	R	R	R	R	R	R	C		
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals (E200.8) Zn (E200.8) Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl- SO_4, Nitrate-N Nitrite-N NO3+NO2-N Perchlorate (E300)	Turbidity TDS (SM2540C/E160.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)	Total Recoverable Metals (E200.8) Mn, Fe			Comments
Outfall 011	Outfall011_20230225_Comp	2/25/2023 1220	WM	500 mL Poly	1	HNO_3	90	Yes	X										X	X			Outfall 011 analyze for Mn and Fe.
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	1L Poly	1	None	115	No			X												
			WM	500 mL Poly	2	None	120	No				X											
			WM	500 mL Poly	2	None	130	No					X										48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X									48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X							
			WM	1 L Glass Amber	2	None	170	No									X						
			WM	1 L Glass Amber	2	None	180	No										X					
			WM	1L Poly	1	None	185	No							X								
	Outfall011_20230225_Comp_Extra	2/25/2023 1220	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	500 mL Poly	2	None	120	No				H											Hold
			WM	500 mL Poly	2	None	130	No					H										Hold
			WM	1 L Glass Amber	2	None	170	No									H						Hold
			WM	1 L Glass Amber	2	None	180	No										H					Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	2.27.2023/1120	H&A	[signature]	2/27/23 1120 EC
[signature]	2/27/23 1800	EC	[signature] EC	2-27-23 18'00
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: __X__

2.6/2.5, 3.0/2.9 SC12

1

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3/22/2023

2019-2020 Rainy Season
Version 4

129011

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel 714-895-5494 **ECI Project #57013187**	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Project Manager:** Katherine Miller 520.289.8606 520.904.6944 (cell)
Sampler: Adrian Mobeka	**Field Manager:** Mark Dominick 978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R Total Dissolved Metals. (E200.8) Zn (E200.8) Cu, Pb, Cd, Se	R Cyanide (SM4500-CN-E / E335.2)	R Gross Alpha(E900.0) Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	R Total Dissolved Metals. Mercury (E245.1)	C Total Dissolved Metals (E200.8): Mn, Fe	Comments
Outfall 011	Outfall011_20230225_Comp_F	2/25/2023 1220	WM	1L Poly	1	None	200	Yes	X					Filter and preserve w/in 24hrs of receipt at lab. Outfall 011 analyze for Mn and Fe.
			WM	borosilicate vials	1	None	320	No				X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall011_20230225_Comp	2/25/2023 1220	WM	500 mL Poly	1	NaOH	220	No		X				
			WM	2.5 Gal Cube	1	None	225	No			X			Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No						
			WM	1 Gal Cube	6	None	235	No			X			Only test if first or second rain events of the year Deliver to ABC Labs in Ventura, CA.

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:	
M Dominick	2-27-2023 1120	H&A	[signature]	2/27/23	1120 EC
[signature]	2/27/23	1800 EC	[signature] EC	2-27-23	18:00
Relinquished By	Date/Time:	Company:	Received By	Date/Time:	

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

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3/22/2023

2019-2020 Rainy Season
Version 4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208606.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-129011-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall 011 - Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall011_20230225_Comp (570-129011-1)	2/25/23	12:20 Pacific		Water			X	2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		02/28/23 9:17	EC		3.1.23 930	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.1c

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-209611.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-129011-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall 011 - Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall011_20230225_Comp_Extra (570-129011-2)	2/25/23	12:20 Pacific		Water			X	2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	03/08/23 11:35	EC		3/9/23 9:15	GSRL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.0 C

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-209611.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-129011-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall 011 - Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall011_20230225_Comp_Extra (570-129011-2)	2/25/23	12:20 Pacific		Water			X	2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For ____ Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2
Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:	
Relinquished by: [signature]	Date/Time: 03/08/23 11:35	Company: EC	Received by: [signature]	Date/Time: 3-9-23 915	Company: [illegible]
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 4.0C		

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129011-2

Login Number: 129011
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129011-2

Login Number: 129011
List Number: 2
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 03/01/23 01:40 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.1c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129011-2

Login Number: 129011
List Number: 4
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 03/09/23 05:02 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.0c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/7/2023 1:13:20 PM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall 011 - Comp

JOB NUMBER

570-129011-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization

Virendra R Patil

Generated
4/7/2023 1:13:20 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-129011-3
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129011-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129011-3

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.5º C and 2.9º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013): This method was subcontracted to Aquatic Bioassay & Consulting. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-3

Method	Method Description	Protocol	Laboratory
EPA	Bioassay	EPA	Aquatic

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Aquatic = Aquatic Bioassay & Consulting, 29 North Olive Street, Ventura, CA 93001

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129011-1	Outfall011_20230225_Comp	Water	02/25/23 12:20	02/27/23 18:00

aquatic bioassay & consulting laboratories, inc

March 22, 2023

Mr. Virendra Patel
Eurofins Calscience
7440 Lincoln Way
Garden Grove, CA 92841-1432

Dear Mr. Patel:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms EPA-821-R-02-013.* " Results were as follows:*

CLIENT:	Eurofins Calscience
SAMPLE I.D.:	Outfall011_20230225_Comp_F
DATE RECEIVED:	27 Feb - 2023
ABC LAB. NO.:	CSE0223.190

CHRONIC CERIODAPHNIA SURVIVAL & REPRODUCTION BIOASSAY

IWC = 100.00%

TST RESULT

SURVIVAL = PASS % EFFECT = 0.00 %

REPRODUCTION = PASS % EFFECT = 2.82 %

Yours very truly,

Scott Johnson
Laboratory Director

*Note: The chronic survival TST analysis is not available for ceriodaphnia dubia.

CETIS Summary Report

Report Date: 21 Mar-23 16:58 (p 1 of 1)
Test Code/ID: CSE0223.190cer / 09-3484-5649

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	05-7929-1573	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**			
Start Date:	28 Feb-23 14:12	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water		
Ending Date:	07 Mar-23 14:20	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable		
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO	**Age:**	<24
Sample ID:	11-1668-2805	**Code:**	CSE0223.190cer	**Project:**			
Sample Date:	25 Feb-23 12:20	**Material:**	Sample Water	**Source:**	Bioassay Report		
Receipt Date:	27 Feb-23 13:45	**CAS (PC):**		**Station:**	Outfall011_20230225_Comp_F		
Sample Age:	74h (4 °C)	**Client:**	Eurofins Calscience				

SIngle Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
20-4147-9553	7d Survival Rate	Fisher Exact Test	1.0000	100% passed 7d survival rate	1
12-4660-5550	Reproduction	TST-Welch's t Test	<1.0E-05	100% passed reproduction	1

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
20-4147-9553	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
12-4660-5550	Reproduction	Control Resp	26.55	15	<<	Yes	Passes Criteria

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	26.55	25.18	27.92	19	31	0.6548	2.929	11.03%	0.00%
100		20	25.8	24.82	26.78	23	32	0.4679	2.093	8.11%	2.82%

7d Survival Rate Detail — MD5: E2FCA10CAEB5BD33B061F6901431A2E1

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Reproduction Detail — MD5: F5357D6409970F6AD70BD1918BE2B015

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	28	29	29	27	25	29	26	29	28	27
		27	28	27	23	26	31	28	24	19	21
100		26	27	25	29	23	25	26	25	25	25
		24	23	25	26	25	24	28	27	32	26

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	12-4660-5550	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	21 Mar-23 16:56	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	18 Mar-23 12:57	**MD5 Hash:**	F5357D6409970F6AD70BD1918BE2B015	**Editor ID:**	007-730-798-8
Batch ID:	05-7929-1573	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	28 Feb-23 14:12	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	07 Mar-23 14:20	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	11-1668-2805	**Code:**	CSE0223.190cer	**Project:**	
Sample Date:	25 Feb-23 12:20	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	27 Feb-23 13:45	**CAS (PC):**		**Station:**	Outfall011_20230225_Comp_F
Sample Age:	74h (4 °C)	**Client:**	Eurofins Calscience		

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	100% passed reproduction endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(α:20%)
Negative Control		100*	37	8.679	0.8514	CDF	<1.0E-05	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	26.55	15	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	5.625	5.625	1	0.8684	0.3573	Non-Significant Effect
Error	246.15	6.47763	38			
Total	251.775		39			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Levene Equality of Variance Test	1.767	7.353	0.1916	Equal Variances
	Mod Levene Equality of Variance Test	1.149	7.353	0.2906	Equal Variances
	Variance Ratio F Test	1.959	3.432	0.1519	Equal Variances
Distribution	Anderson-Darling A2 Test	0.6311	3.878	0.1007	Normal Distribution
	D'Agostino Kurtosis Test	1.941	2.576	0.0523	Normal Distribution
	D'Agostino Skewness Test	1.311	2.576	0.1898	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	5.485	9.21	0.0644	Normal Distribution
	Kolmogorov-Smirnov D Test	0.1501	0.1617	0.0237	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9609	0.9236	0.1803	Normal Distribution

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	26.55	25.18	27.92	27	19	31	0.6548	11.03%	0.00%
100		20	25.8	24.82	26.78	25	23	32	0.4679	8.11%	2.82%

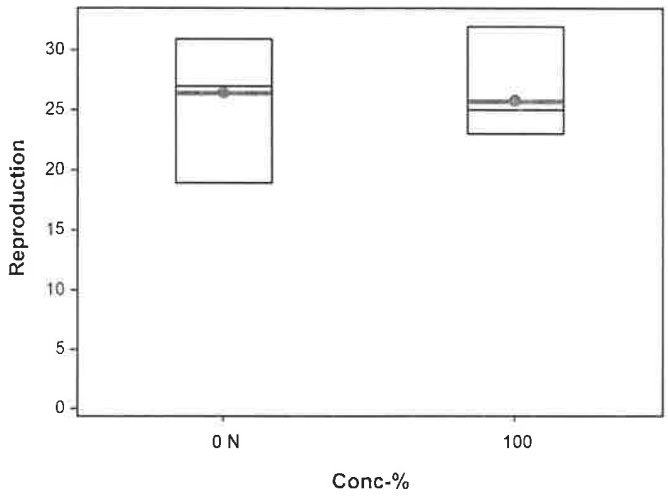
Reproduction Detail

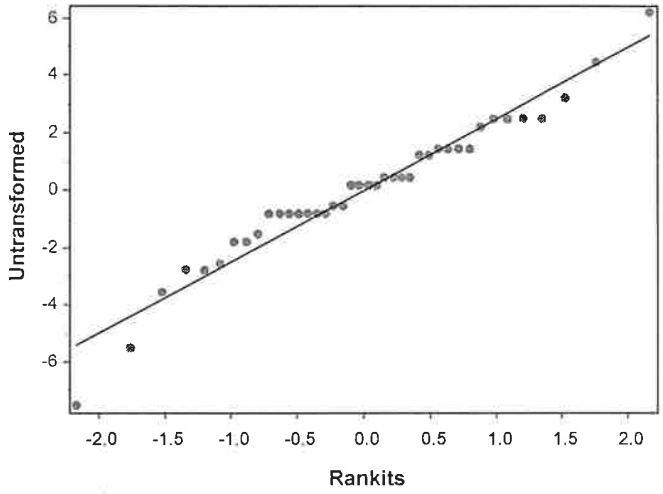
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	28	29	29	27	25	29	26	29	28	27
		27	28	27	23	26	31	28	24	19	21
100		26	27	25	29	23	25	26	25	25	25
		24	23	25	26	25	24	28	27	32	26

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	12-4660-5550	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	21 Mar-23 16:56	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	18 Mar-23 12:57	**MD5 Hash:**	F5357D6409970F6AD70BD1918BE2B015	**Editor ID:**	007-730-798-8

Graphics





Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	20-4147-9553	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	21 Mar-23 16:56	**Analysis:**	Single 2x2 Contingency Table	**Status Level:**	1
Edit Date:	18 Mar-23 12:57	**MD5 Hash:**	E2FCA10CAEB5BD33B061F6901431A2E1	**Editor ID:**	007-730-798-8
Batch ID:	05-7929-1573	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	28 Feb-23 14:12	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	07 Mar-23 14:20	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	11-1668-2805	**Code:**	CSE0223.190cer	**Project:**	
Sample Date:	25 Feb-23 12:20	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	27 Feb-23 13:45	**CAS (PC):**		**Station:**	Outfall011_20230225_Comp_F
Sample Age:	74h (4 °C)	**Client:**	Eurofins Calscience		

Data Transform	Alt Hyp	Comparison Result
Untransformed	C > T	100% passed 7d survival rate endpoint

Fisher Exact Test

Control	vs	Conc-%	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		100	1.0000	Exact	1.0000	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	20	0	20	1.0000	0.0000	0.00%
100		20	0	20	1.0000	0.0000	0.00%

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

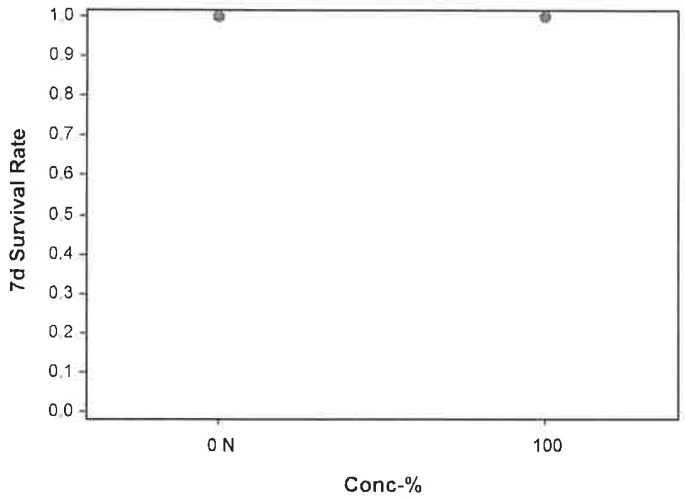
7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	20-4147-9553	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	21 Mar-23 16:56	**Analysis:**	Single 2x2 Contingency Table	**Status Level:**	1
Edit Date:	18 Mar-23 12:57	**MD5 Hash:**	E2FCA10CAEB5BD33B061F6901431A2E1	**Editor ID:**	007-730-798-8

Graphics



CETIS Measurement Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	05-7929-1573	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**		
Start Date:	28 Feb-23 14:12	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water	
Ending Date:	07 Mar-23 14:20	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable	
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO	**Age:** <24

Sample ID:	11-1668-2805	**Code:**	CSE0223.190cer	**Project:**	
Sample Date:	25 Feb-23 12:20	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	27 Feb-23 13:45	**CAS (PC):**		**Station:**	Outfall011_20230225_Comp_F
Sample Age:	74h (4 °C)	**Client:**	Eurofins Calscience		

Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	62.62	62.19	63.06	62	63	0.06469	0.5175	0.83%	0
100		8	21	21	21	21	21	0	0	0.00%	0
Overall		16	41.81	30.36	53.27	21	63	5.374	21.5	51.42%	0 (0%)

Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	373.6	370	377.3	369	380	0.5467	4.373	1.17%	0
100		8	148.2	144.5	152	142	155	0.566	4.528	3.05%	0
Overall		16	260.9	198.9	323	142	380	29.12	116.5	44.63%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.887	7.712	8.063	7.6	8.2	0.02625	0.21	2.66%	0
100		8	7.763	7.645	7.88	7.6	7.9	0.0176	0.1408	1.81%	0
Overall		16	7.825	7.727	7.923	7.6	8.2	0.0461	0.1844	2.36%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	96.38	95.94	96.81	96	97	0.06469	0.5175	0.54%	0
100		8	25	25	25	25	25	0	0	0.00%	0
Overall		16	60.69	41.05	80.33	25	97	9.215	36.86	60.74%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	8.038	7.994	8.081	8	8.1	0.00647	0.05176	0.64%	0
100		8	8.063	7.986	8.139	7.9	8.2	0.01145	0.09162	1.14%	0
Overall		16	8.05	8.011	8.089	7.9	8.2	0.01826	0.07303	0.91%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
100		8	24	24	24	24	24	0	0	0.00%	0
Overall		16	24	24	24	24	24	0	0	0.00%	0 (0%)

Temp. deg. C = 4.0°C

Chlorine (mg/L) = < 0.1

NH3 (mg/L) = < 0.1

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 015] Outfall 011 Comp	
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel: 714-895-5494 ECI Project #67013187	Project Manager: Katherine Miller 520 269 8606, 520 904 6944 (cell)	
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978 234 5033, 818 599 0702 (cell)	

Sample Description	Sample ID	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals (E200 8) Zn (E200 8) Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0) Tritium (H-3) (E900.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	Total Dissolved Metals Mercury (E245.1)	Total Dissolved Metals (E200.8) Mn, Fe	Comments
Outfall 011	Outfall011_20230225_Comp_F	2/25/2023 1220	WW	1L Poly	1	None	200	Yes	X					X	Filter and preserve w/in 24hrs of receipt at lab Outfall 011 analyze for Mn and Fe
			WW	borosilicate vials	1	None	320	No					X		Sample receiving DO NOT OPEN BAG Bag to be opened in Mercury Prep using clean procedures
	Outfall011_20230225_Comp	2/25/2023 1220	WW	500 mL Poly	1	NaOH	220	No		X					
			WW	2.5 Gal Cube	1	None	225	No			X				Unfiltered and unpreserved analysis Separate RAD onto another workorder Analyze duplicate, not MS/MSD
			WW	1 L Glass Amber	1	None	230	No							
			WW	1 Gal Cube	1	None	235	No				X			Only last if first or second rain events of the year Deliver to ABC Labs in Ventura, CA

-19

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By: M Dominick	Date/Time: 2-27-2023	Company: 1120 H:A	Received By: [illegible]
Relinquished By:	Date/Time:	Company:	Received By: 2/27/23 1120 EC
Relinquished By: M Dominick	Date/Time: 2-27-23	Company: 1345 H:A	Received By: 2.27.23 1345

Turn-around time (Check)
24 Hour ____ 72 Hour ____ 10 Day __X__
48 Hour: ____ 5 Day ____ Normal ____

Sample Integrity (Check)
Intact ____ On Ice ____
Store samples for 6 months

Data Requirements (Check)
No Level IV ____ All Level IV __X__

* Hand-delivered to ABC with copy of COC

aquatic bioassay & consulting laboratories, inc

CHRONIC CERIODAPHNIA SURVIVAL AND REPRODUCTION BIOASSAY

DATE: 7 February - 2023

STANDARD TOXICANT: Copper Chloride

ENDPOINT: SURVIVAL

NOEC = 10.00 ug/l

EC25 = 15.00 ug/l
EC50 = 20.00 ug/l

ENDPOINT: REPRODUCTION

NOEC = 10.00 ug/l

IC25 = 12.18 ug/l
IC50 = 18.12 ug/l

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	19-0270-0407	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	Tina DeLeon
Start Date:	07 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	14 Feb-23 15:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 2h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	18-3831-7124	**Code:**	CER020723	**Project:**	REF TOX
Sample Date:	07 Feb-23 14:00	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:	14 Feb-23 15:45	**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	S
12-2134-6724	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test	✓	10	30	17.32	---	1
01-7826-1344	Reproduction	Dunnett Multiple Comparison Test	✓	10	30	17.32	14.9%	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓	Level	µg/L	95% LCL	95% UCL	S
10-0781-6132	7d Survival Rate	Linear Interpolation (ICPIN)		EC15	13	13	13	1
				EC20	14	14	14	
				EC25	15	15	15	
				EC40	18	18	18	
				EC50	20	20	20	
20-1572-0105	Reproduction	Linear Interpolation (ICPIN)	✓	IC15	9.744	8.161	12.04	1
			✓	IC20	11	9.214	13.1	
			✓	IC25	12.18	10.33	14.15	
			✓	IC40	15.75	14.27	17.32	
			✓	IC50	18.12	16.89	19.44	

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
10-0781-6132	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
12-2134-6724	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
01-7826-1344	Reproduction	Control Resp	21.6	15	<<	Yes	Passes Criteria
20-1572-0105	Reproduction	Control Resp	21.6	15	<<	Yes	Passes Criteria
01-7826-1344	Reproduction	PMSD	0.1488	0.13	0.47	Yes	Passes Criteria

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	21.6	18.77	24.43	16	29	1.249	3.95	18.29%	0.00%
3		10	27.1	24.85	29.35	21	32	0.9939	3.143	11.60%	-25.46%
5		10	27.2	25.39	29.01	23	31	0.8	2.53	9.30%	-25.93%
10		10	21.3	18.67	23.93	17	28	1.165	3.683	17.29%	1.39%
30		10	0	0	0	0	0	0	0	---	100.00%
50		10	0	0	0	0	0	0	0	---	100.00%

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

7d Survival Rate Detail MD5: E68F14682D021D024F00396964E3E9BD

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Reproduction Detail MD5: B6584EF080BB39328ADF89E906DB2ACD

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	29	25	22	23	20	23	18	23	17	16
3		21	27	27	32	29	27	25	27	31	25
5		30	27	31	29	26	23	24	28	28	26
10		28	20	26	18	21	22	17	18	24	19
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	01-7826-1344	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	B6584EF080BB39328ADF89E906DB2ACD	**Editor ID:**	004-984-722-8
Batch ID:	19-0270-0407	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	Tina DeLeon
Start Date:	07 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	14 Feb-23 15:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 2h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	18-3831-7124	**Code:**	CER020723	**Project:**	REF TOX
Sample Date:	07 Feb-23 14:00	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:	14 Feb-23 15:45	**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Untransformed	C > T	10	30	17.32	---	3.215	14.88%

Dunnett Multiple Comparison Test

Control	vs	Conc-µg/L	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(α:5%)
Negative Control		3	18	-3.649	2.133	3.215	CDF	1.0000	Non-Significant Effect
		5	18	-3.715	2.133	3.215	CDF	1.0000	Non-Significant Effect
		10	18	0.199	2.133	3.215	CDF	0.6730	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	21.6	15	<<	Yes	Passes Criteria
PMSD	0.1488	0.13	0.47	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	325.4	108.467	3	9.547	8.9E-05	Significant Effect
Error	409	11.3611	36			
Total	734.4		39			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	1.886	11.34	0.5963	Equal Variances
	Levene Equality of Variance Test	0.7841	4.377	0.5107	Equal Variances
	Mod Levene Equality of Variance Test	0.5917	4.377	0.6245	Equal Variances
Distribution	Anderson-Darling A2 Test	0.1802	3.878	0.9718	Normal Distribution
	D'Agostino Kurtosis Test	0.2514	2.576	0.8015	Normal Distribution
	D'Agostino Skewness Test	0.6674	2.576	0.5045	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	0.5086	9.21	0.7754	Normal Distribution
	Kolmogorov-Smirnov D Test	0.06346	0.1617	1.0000	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9856	0.9236	0.8811	Normal Distribution

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	21.6	18.77	24.43	22.75	16	29	1.249	18.29%	0.00%
3		10	27.1	24.85	29.35	27	21	32	0.9939	11.60%	-25.46%
5		10	27.2	25.39	29.01	27.67	23	31	0.8	9.30%	-25.93%
10		10	21.3	18.67	23.93	20.5	17	28	1.165	17.29%	1.39%
30		10	0	0	0	0	0	0	0	---	100.00%
50		10	0	0	0	0	0	0	0	---	100.00%

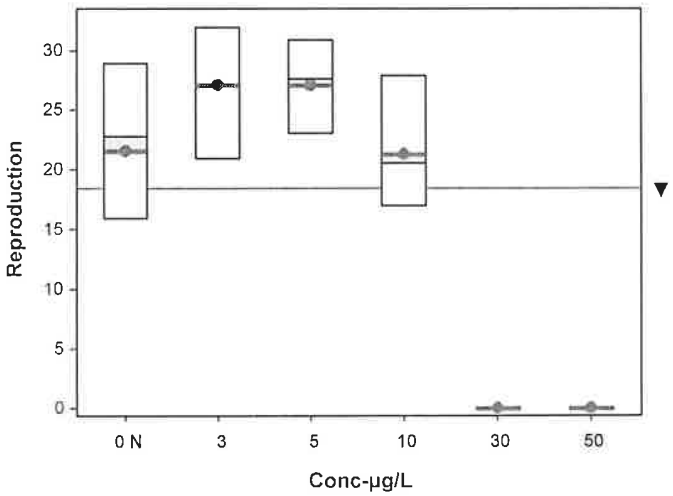
Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

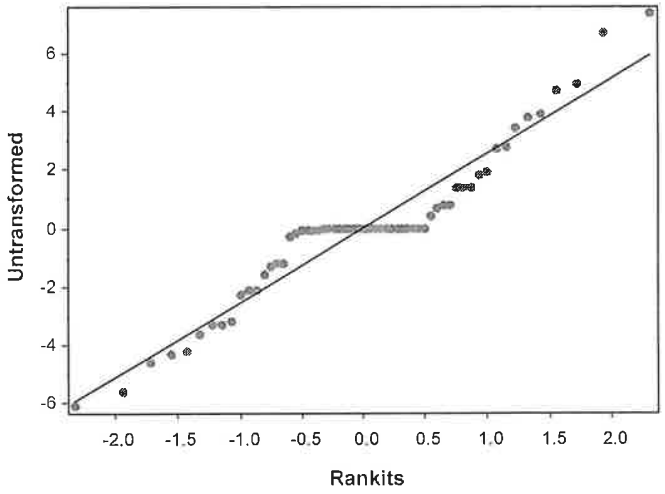
Analysis ID:	01-7826-1344	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	B6584EF080BB39328ADF89E906DB2ACD	**Editor ID:**	004-984-722-8

Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	29	25	22	23	20	23	18	23	17	16
3		21	27	27	32	29	27	25	27	31	25
5		30	27	31	29	26	23	24	28	28	26
10		28	20	26	18	21	22	17	18	24	19
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

Graphics





CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	10-0781-6132	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	004-984-722-8
Batch ID:	19-0270-0407	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	Tina DeLeon
Start Date:	07 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	14 Feb-23 15:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 2h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	18-3831-7124	**Code:**	CER020723	**Project:**	REF TOX
Sample Date:	07 Feb-23 14:00	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:	14 Feb-23 15:45	**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	1	0.8	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
EC15	13	13	13
EC20	14	14	14
EC25	15	15	15
EC40	18	18	18
EC50	20	20	20

7d Survival Rate Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-µg/L	**Code**	**Count**	**Mean**	**Median**	**Min**	**Max**	**CV%**	**%Effect**	**ΣA/ΣB**	**Mean**	**%Effect**
0	N	10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	---	100.00%	0/10	0.0000	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	---	100.00%	0/10	0.0000	100.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

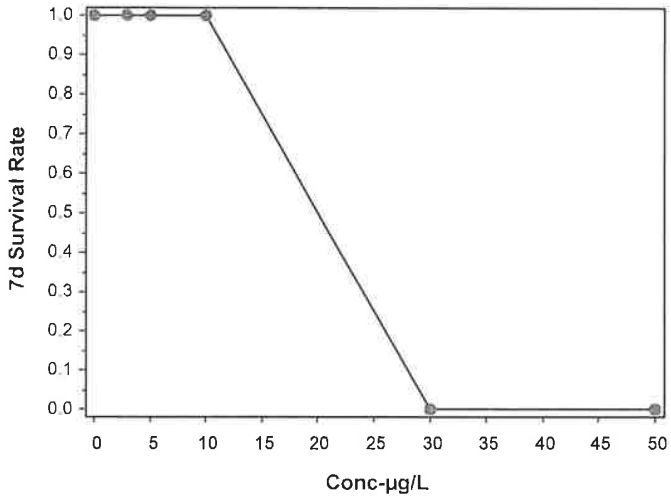
7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	10-0781-6132	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	004-984-722-8

Graphics



Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	20-1572-0105	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	B6584EF080BB39328ADF89E906DB2ACD	**Editor ID:**	004-984-722-8
Batch ID:	19-0270-0407	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	Tina DeLeon
Start Date:	07 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	14 Feb-23 15:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 2h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	18-3831-7124	**Code:**	CER020723	**Project:**	REF TOX
Sample Date:	07 Feb-23 14:00	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:	14 Feb-23 15:45	**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1451893	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	21.6	15	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
IC15	9.744	8.161	12.04
IC20	11	9.214	13.1
IC25	12.18	10.33	14.15
IC40	15.75	14.27	17.32
IC50	18.12	16.89	19.44

Reproduction Summary

			Calculated Variate						Isotonic Variate	
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	10	21.6	22.75	16	29	18.29%	0.00%	25.3	0.00%
3		10	27.1	27	21	32	11.60%	-25.46%	25.3	0.00%
5		10	27.2	27.67	23	31	9.30%	-25.93%	25.3	0.00%
10		10	21.3	20.5	17	28	17.29%	1.39%	21.3	15.81%
30		10	0	0	0	0	---	100.00%	0	100.00%
50		10	0	0	0	0	---	100.00%	0	100.00%

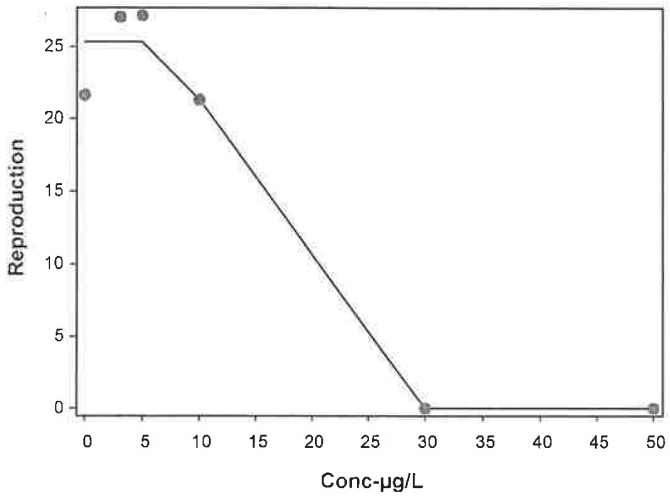
Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	29	25	22	23	20	23	18	23	17	16
3		21	27	27	32	29	27	25	27	31	25
5		30	27	31	29	26	23	24	28	28	26
10		28	20	26	18	21	22	17	18	24	19
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	20-1572-0105	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	B6584EF080BB39328ADF89E906DB2ACD	**Editor ID:**	004-984-722-8

Graphics



Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	12-2134-6724	Endpoint:	7d Survival Rate	CETIS Version:	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	Analysis:	STP 2xK Contingency Tables	Status Level:	1
Edit Date:	10 Mar-23 17:02	MD5 Hash:	E68F14682D021D024F00396964E3E9BD	Editor ID:	004-984-722-8
Batch ID:	19-0270-0407	Test Type:	Reproduction-Survival (7d)	Analyst:	Tina DeLeon
Start Date:	07 Feb-23 14:00	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Feb-23 15:45	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 2h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	18-3831-7124	Code:	CER020723	Project:	REF TOX
Sample Date:	07 Feb-23 14:00	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:	14 Feb-23 15:45	CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units
Untransformed	C > T	10	30	17.32	---

Fisher Exact/Bonferroni-Holm Test

Control	vs	Conc-µg/L	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		3	1.0000	Exact	1.0000	Non-Significant Effect
		5	1.0000	Exact	1.0000	Non-Significant Effect
		10	1.0000	Exact	1.0000	Non-Significant Effect
		30*	0.0000	Exact	2.7E-05	Significant Effect
		50*	0.0000	Exact	2.7E-05	Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-µg/L	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	10	0	10	1.0000	0.0000	0.00%
3		10	0	10	1.0000	0.0000	0.00%
5		10	0	10	1.0000	0.0000	0.00%
10		10	0	10	1.0000	0.0000	0.00%
30		0	10	10	0.0000	1.0000	100.00%
50		0	10	10	0.0000	1.0000	100.00%

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

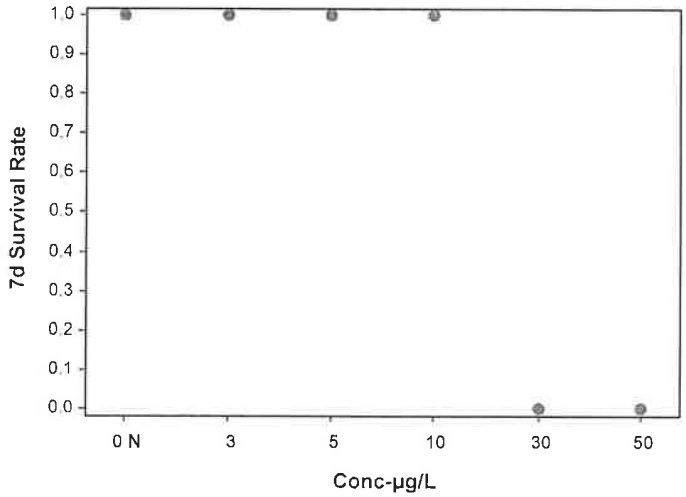
Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	12-2134-6724	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	STP 2xK Contingency Tables	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	004-984-722-8

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Graphics



CETIS Measurement Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	19-0270-0407	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	Tina DeLeon	
Start Date:	07 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water	
Ending Date:	14 Feb-23 15:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable	
Test Length:	7d 2h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO	**Age:** <24
Sample ID:	18-3831-7124	**Code:**	CER020723	**Project:**	REF TOX	
Sample Date:	07 Feb-23 14:00	**Material:**	Copper chloride	**Source:**	Reference Toxicant	
Receipt Date:	14 Feb-23 15:45	**CAS (PC):**		**Station:**	REF TOX	
Sample Age:	---	**Client:**	ABC Labs			

Alkalinity (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	65	65	65	65	65	0	0	0.00%	0
50		4	60	60	60	60	60	0	0	0.00%	0
Overall		12	63.33	61.77	64.9	60	65	0.7107	2.462	3.89%	0 (0%)

Conductivity-µmhos

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	373.4	370.2	376.6	369	380	0.4815	3.852	1.03%	0
3		8	376.2	370.9	381.6	370	386	0.7955	6.364	1.69%	0
5		8	369.1	365.8	372.4	364	373	0.493	3.944	1.07%	0
10		8	369.9	368.6	371.2	367	372	0.1941	1.553	0.42%	0
30		6	370.3	368.9	371.8	369	373	0.2277	1.366	0.37%	0
50		3	370	365	375	368	372	0.6667	2	0.54%	0
Overall		41	371.7	370.3	373.2	364	386	0.7063	4.522	1.22%	0 (0%)

Dissolved Oxygen-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.838	7.677	7.998	7.6	8.1	0.02403	0.1923	2.45%	0
3		8	7.763	7.596	7.929	7.5	8.1	0.02494	0.1996	2.57%	0
5		8	7.713	7.537	7.888	7.5	8.1	0.02625	0.21	2.72%	0
10		8	7.675	7.509	7.841	7.4	8	0.02478	0.1982	2.58%	0
30		6	7.617	7.295	7.938	7.1	8	0.05101	0.3061	4.02%	0
50		3	7.867	7.58	8.154	7.8	8	0.03849	0.1155	1.47%	0
Overall		41	7.737	7.668	7.805	7.1	8.1	0.03381	0.2165	2.80%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	98	98	98	98	98	0	0	0.00%	0
50		4	99	99	99	99	99	0	0	0.00%	0
Overall		12	98.33	98.02	98.65	98	99	0.1421	0.4924	0.50%	0 (0%)

pH-Units

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.95	7.841	8.059	7.7	8.1	0.01637	0.1309	1.65%	0
3		8	7.975	7.901	8.049	7.8	8.1	0.01108	0.08864	1.11%	0
5		8	7.95	7.841	8.059	7.7	8.1	0.01637	0.1309	1.65%	0
10		8	7.95	7.85	8.05	7.7	8.1	0.01494	0.1195	1.50%	0
30		6	7.917	7.794	8.039	7.7	8	0.01948	0.1169	1.48%	0
50		3	7.9	7.652	8.148	7.8	8	0.03333	0.1	1.27%	0
Overall		41	7.946	7.911	7.982	7.7	8.1	0.01749	0.112	1.41%	0 (0%)

Ceriodaphnia 7-d Survival and Reproduction Test
Aquatic Bioassay & Consulting Labs, Inc.

Temperature-°C

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
3		8	24	24	24	24	24	0	0	0.00%	0
5		8	24	24	24	24	24	0	0	0.00%	0
10		8	24	24	24	24	24	0	0	0.00%	0
30		5	24	24	24	24	24	0	0	0.00%	0
50		3	24	24	24	24	24	0	0	0.00%	0
Overall		40	24	24	24	24	24	0	0	0.00%	0 (0%)

129011

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-129011 Chain of Custody

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011 018] Outfall 011 Comp
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue Suite #100 Tustin, CA 92780 Tel. 714-895-5494 **ECI Project #57013187**	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Project Manager:** Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	**Field Manager:** Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED														
									R	R	R	R	R	R	R	R	R	R	R	C		
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals (E200.8) Zn (E200.8) Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl- SO_4, Nitrate-N Nitrite-N NO3+NO2-N Perchlorate (E300)	Turbidity TDS (SM2540C/E160.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)	Total Recoverable Metals (E200.8) Mn, Fe			Comments
Outfall 011	Outfall011_20230225_Comp	2/25/2023 1220	WM	500 mL Poly	1	HNO_3	90	Yes	X										X	X			Outfall 011 analyze for Mn and Fe.
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	1L Poly	1	None	115	No			X												
			WM	500 mL Poly	2	None	120	No				X											
			WM	500 mL Poly	2	None	130	No					X										48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X									48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X							
			WM	1 L Glass Amber	2	None	170	No									X						
			WM	1 L Glass Amber	2	None	180	No										X					
			WM	1L Poly	1	None	185	No							X								
	Outfall011_20230225_Comp_Extra	2/25/2023 1220	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	500 mL Poly	2	None	120	No				H											Hold
			WM	500 mL Poly	2	None	130	No					H										Hold
			WM	1 L Glass Amber	2	None	170	No									H						Hold
			WM	1 L Glass Amber	2	None	180	No										H					Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	2.27.2023/1120	H&A	[signature]	2/27/23 1120 EC
[signature]	2/27/23 1800	EC	[signature] EC	2-27-23 18'00

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X____
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: ___X_____

2.6/2.5, 3.0/2.9 SC12

1

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4/7/2023

2019-2020 Rainy Season
Version 4

129011

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:	ANALYSIS REQUIRED
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp	
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel 714-895-5494 **ECI Project #57013187**	Project Manager: Katherine Miller 520.289.8606 520.904.6944 (cell)	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	
Sampler: Adrian Mobeka		

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R: Total Dissolved Metals. (E200.8) Zn (E200.8) Cu, Pb, Cd, Se	R: Cyanide (SM4500-CN-E / E335.2)	R: Gross Alpha(E900.0) Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R: Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	R: Total Dissolved Metals. Mercury (E245.1)	C: Total Dissolved Metals (E200.8): Mn, Fe	Comments
Outfall 011	Outfall011_20230225_Comp_F	2/25/2023 1220	WM	1L Poly	1	None	200	Yes	X					X	Filter and preserve w/in 24hrs of receipt at lab. Outfall 011 analyze for Mn and Fe.
			WM	borosilicate vials	1	None	320	No					X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall011_20230225_Comp	2/25/2023 1220	WM	500 mL Poly	1	NaOH	220	No		X					
			WM	2.5 Gal Cube	1	None	225	No			X				Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No							
			WM	1 Gal Cube	6	None	235	No				X			Only test if first or second rain events of the year Deliver to ABC Labs in Ventura, CA.

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	2-27-2023/1120	H.A	[signature]	2/27/23 1120 EC
[signature]	2/27/23 1800	EC	[signature] EC	2-27-23 18:00
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

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4/7/2023

2019-2020 Rainy Season
Version 4

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129011-3

Login Number: 129011
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/17/2023 1:06:08 PM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall 011 - Comp

JOB NUMBER

570-129011-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

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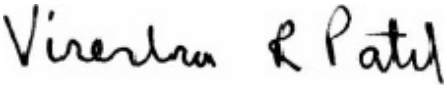
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-4

Qualifiers

Rad

Qualifier	Qualifier Description
F	MS/MSD Recovery and/or RPD exceeds the control limits
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.
X	Tracer is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129011-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129011-4

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.5º C and 2.9º C.

RAD
Method 900.0: Gross Alpha Beta prep batch 160-606236:

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 160-606326 and analytical batch 160-606671 were outside control limits for one or more analytes. In addition RER/RPD was also outside of control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 900.0: Gross Alpha Beta prep batch 160-606326:

The detection goal was not met for the following sample(s). The samples and batch QC were prepped at full volume. Matrix interferences are suspected because the method blank achieved the detection goal demonstrating acceptable sample preparation and instrument performance. (570-129852-R-1-F)

Method 900.0: Gross Alpha Beta prep batch 160-606326:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall011_20230225_Comp (570-129011-1), (LCS 160-606326/2-A), (LCSB 160-606326/3-A), (MB 160-606326/1-A), (570-129852-R-1-F), (570-129852-R-1-J MS), (570-129852-R-1-L MSBT), (570-129852-R-1-M MSBTD) and (570-129852-R-1-K MSD)

Method 901.1: Gamma Prep Batch 160-604735
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211

Job ID: 570-129011-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

Th-227 Pb-211
Bi-214 Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Outfall011_20230225_Comp (570-129011-1), (570-129084-R-1-F) and (570-129084-R-1-H DU)

Method 903.0: Radium-226 prep batch 160-603016:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall011_20230225_Comp (570-129011-1), (LCS 160-603016/2-A), (LCSD 160-603016/3-A) and (MB 160-603016/1-A)

Method 904.0: Radium-228 batch 603018
The detection goal was not met for the following sample(s). Sample was prepped at a reduced volume due to the presence of matrix interferences: Outfall011_20230225_Comp (570-129011-1). Analytical results are reported with the detection limit achieved.

Method 904.0: Radium-228 batch 603018
The LCS recovered at (126%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCS 160-603018/2-A)

Method 904.0: Radium-228 batch 603018
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall011_20230225_Comp (570-129011-1), (LCS 160-603018/2-A), (LCSD 160-603018/3-A) and (MB 160-603018/1-A)

Method 905: Strontium-90 prep batch 160-603495:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall011_20230225_Comp (570-129011-1), (LCS 160-603033/2-A), (LCSD 160-603033/3-A) and (MB 160-603033/1-A)

Method 905: Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Method 906.0: Tritium 605783
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall011_20230225_Comp (570-129011-1), (LCS 160-605783/2-A), (MB 160-605783/1-A), (160-49448-A-1-C), (160-49448-A-1-D MS), (570-130128-R-1-A) and (570-130128-R-1-B DU)

Job ID: 570-129011-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method A-01-R: Isotopic Uranium Batch 605724
The detection goal was not met for the following sample(s). The sample was prepped at a reduced volume due to the presence of matrix interferences: Outfall011_20230225_Comp (570-129011-1). Analytical results are reported with the detection limit achieved.

Method A-01-R: Isotopic Uranium Batch 605724
The tracer recovery is outside the lower control limit (30%) for the following sample due to matrix interferences: Outfall011_20230225_Comp (570-129011-1).

Method A-01-R: Isotopic Uranium Batch 605724
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.Outfall011_20230225_Comp (570-129011-1), (LCS 160-605724/2-A), (MB 160-605724/1-A), (570-129852-R-1-E), (570-129852-L-1-G MS) and (570-129852-L-1-H MSD)

Method ExtChrom: Uranium Prep Batch 160-605724:
The following sample was prepared at a reduced aliquot due to sediment and discoloration: Outfall011_20230225_Comp (570-129011-1).

Method PrecSep_0: Radium-228 Prep Batch 160-602360

The following sample was prepared at a reduced aliquot due to Matrix: Outfall011_20230225_Comp (570-129011-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep_0:

Method PrecSep_0:

Method PrecSep_0:

Method PrecSep_0: Radium-228 Prep Batch 160-603018

The following sample was prepared at a reduced aliquot due to Matrix: Outfall011_20230225_Comp (570-129011-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep_0: Radium-228 Prep Batch 160-603018

A deviation from the Standard Operating Procedure (SOP) occurred. Details are as follows: Due to matrix interference observed in the initial prep of the sample, the sample was prepared at a reduced aliquot, cooked dry, muffled in an oven, and digested to reduce organic interference before the procedure for water samples was continued.

Method PrecSep-21: Radium-226 Prep Batch 160-602356

The following sample was prepared at a reduced aliquot due to Matrix: Outfall011_20230225_Comp (570-129011-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21:

Method PrecSep-21:

Method PrecSep-21:

Job ID: 570-129011-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method PrecSep-21: Radium-226 Prep Batch 160-603016

The following sample was prepared at a reduced aliquot due to Matrix: Outfall011_20230225_Comp (570-129011-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21: Radium-226 Prep Batch 160-603016

A deviation from the Standard Operating Procedure (SOP) occurred. Details are as follows: Due to matrix interference observed in the initial prep of the sample, the sample was prepared at a reduced aliquot, cooked dry, muffled in an oven, and digested to reduce organic interference before the procedure for water samples was continued.

Method PrecSep-7: Strontium 90 Prep Batch 160-603033

The following sample was prepared at a reduced aliquot due to Matrix: Outfall011_20230225_Comp (570-129011-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-4

Client Sample ID: Outfall011_20230225_Comp **Lab Sample ID: 570-129011-1**

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-4

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: Outfall011_20230225_Comp
Date Collected: 02/25/23 12:20
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129011-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	3.06	F	1.42	1.46	3.00	1.81	pCi/L	04/06/23 10:28	04/11/23 06:09	1
Gross Beta	4.77		0.910	1.03	4.00	0.966	pCi/L	04/06/23 10:28	04/11/23 06:09	1

Client: Haley & Aldrich, Inc.
Job ID: 570-129011-4
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: Outfall011_20230225_Comp
Lab Sample ID: 570-129011-1
Date Collected: 02/25/23 12:20
Matrix: Water
Date Received: 02/27/23 18:00

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	1.53	U	8.30	8.30	20.0	10.3	pCi/L	03/22/23 16:26	03/30/23 08:10	1
Potassium-40	**93.0**		51.6	52.8		52.7	pCi/L	03/22/23 16:26	03/30/23 08:10	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-4

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: Outfall011_20230225_Comp
Date Collected: 02/25/23 12:20
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129011-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.341	U	0.305	0.307	1.00	0.455	pCi/L	03/10/23 07:26	04/07/23 19:32	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*69.2*		*30 - 110*	*03/10/23 07:26*	*04/07/23 19:32*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-4

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: Outfall011_20230225_Comp
Date Collected: 02/25/23 12:20
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129011-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.13	U G	1.69	1.69	1.00	2.87	pCi/L	03/10/23 07:28	03/27/23 12:34	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*69.2*		*30 - 110*	*03/10/23 07:28*	*03/27/23 12:34*	*1*
Y Carrier	*80.4*		*30 - 110*	*03/10/23 07:28*	*03/27/23 12:34*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-4

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: Outfall011_20230225_Comp
Date Collected: 02/25/23 12:20
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129011-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.220	U	0.405	0.405	3.00	0.693	pCi/L	03/09/23 13:03	03/17/23 18:33	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*81.8*		*30 - 110*	*03/09/23 13:03*	*03/17/23 18:33*	*1*
Y Carrier	*70.7*		*30 - 110*	*03/09/23 13:03*	*03/17/23 18:33*	*1*

Client Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-129011-4
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: Outfall011_20230225_Comp
Lab Sample ID: 570-129011-1
Date Collected: 02/25/23 12:20
Matrix: Water
Date Received: 02/27/23 18:00

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-67.1	U	174	174	500	342	pCi/L	03/31/23 16:36	04/05/23 14:39	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-4

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: Outfall011_20230225_Comp
Date Collected: 02/25/23 12:20
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129011-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	2.00	U G	2.00	2.00	1.00	2.49	pCi/L	03/30/23 15:31	04/04/23 20:42	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*29.9*	*X*	*30 - 110*	*03/30/23 15:31*	*04/04/23 20:42*	*1*

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-4

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-129011-1	Outfall011_20230225_Comp	69.2
LCS 160-603016/2-A	Lab Control Sample	75.7
LCSD 160-603016/3-A	Lab Control Sample Dup	85.6
MB 160-603016/1-A	Method Blank	81.1

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-129011-1	Outfall011_20230225_Comp	69.2	80.4
LCS 160-603018/2-A	Lab Control Sample	75.7	78.9
LCSD 160-603018/3-A	Lab Control Sample Dup	85.6	75.9
MB 160-603018/1-A	Method Blank	81.1	81.1

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-129011-1	Outfall011_20230225_Comp	81.8	70.7
LCS 160-603033/2-A	Lab Control Sample	79.1	82.2
LCSD 160-603033/3-A	Lab Control Sample Dup	80.1	82.2
MB 160-603033/1-A	Method Blank	87.1	81.1

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-129011-1	Outfall011_20230225_Comp	29.9 X
LCS 160-605724/2-A	Lab Control Sample	92.1
MB 160-605724/1-A	Method Blank	92.8

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-606326/1-A
Matrix: Water
Analysis Batch: 606671

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606326

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.4133	U	0.657	0.658	3.00	1.12	pCi/L	04/06/23 10:28	04/10/23 20:47	1
Gross Beta	0.02677	U	0.496	0.496	4.00	0.874	pCi/L	04/06/23 10:28	04/10/23 20:47	1

Lab Sample ID: LCS 160-606326/2-A
Matrix: Water
Analysis Batch: 606895

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606326

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	51.96		7.62	3.00	2.05	pCi/L	103	75 - 125

Lab Sample ID: LCSB 160-606326/3-A
Matrix: Water
Analysis Batch: 606671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606326

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.4	74.51		7.98	4.00	0.927	pCi/L	102	75 - 125

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-604735/1-A
Matrix: Water
Analysis Batch: 605378

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604735

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	5.575	U	11.5	11.5	20.0	14.5	pCi/L	03/22/23 16:26	03/29/23 21:25	1
Potassium-40	-139.9	U	180	180		285	pCi/L	03/22/23 16:26	03/29/23 21:25	1

Lab Sample ID: LCS 160-604735/2-A
Matrix: Water
Analysis Batch: 605376

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604735

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	135500		16100		443	pCi/L	100	75 - 125
Cesium-137	40800	42170		5030	20.0	105	pCi/L	103	75 - 125
Cobalt-60	17800	18660		2230		54.8	pCi/L	105	75 - 125

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-603016/1-A
Matrix: Water
Analysis Batch: 606563

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 603016

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.04636	U	0.0459	0.0461	1.00	0.120	pCi/L	03/09/23 10:54	04/07/23 19:29	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.1*		*30 - 110*	*03/09/23 10:54*	*04/07/23 19:29*	*1*

Lab Sample ID: LCS 160-603016/2-A
Matrix: Water
Analysis Batch: 606563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 603016

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.92		1.15	1.00	0.106	pCi/L	96	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*75.7*		*30 - 110*

Lab Sample ID: LCSD 160-603016/3-A
Matrix: Water
Analysis Batch: 606563

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 603016

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	11.01		1.14	1.00	0.0961	pCi/L	97	75 - 125	0.04	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*85.6*		*30 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-603018/1-A
Matrix: Water
Analysis Batch: 605096

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 603018

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2189	U	0.368	0.368	1.00	0.630	pCi/L	03/09/23 11:03	03/27/23 12:30	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.1*		*30 - 110*	*03/09/23 11:03*	*03/27/23 12:30*	*1*
Y Carrier	*81.1*		*30 - 110*	*03/09/23 11:03*	*03/27/23 12:30*	*1*

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-603018/2-A
Matrix: Water
Analysis Batch: 605096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 603018

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.08	10.18		1.49	1.00	0.687	pCi/L	126	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*75.7*		*30 - 110*
Y Carrier	*78.9*		*30 - 110*

Lab Sample ID: LCSD 160-603018/3-A
Matrix: Water
Analysis Batch: 605096

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 603018

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.08	9.224		1.37	1.00	0.735	pCi/L	114	75 - 125	0.33	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*85.6*		*30 - 110*
Y Carrier	*75.9*		*30 - 110*

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-603033/1-A
Matrix: Water
Analysis Batch: 604031

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 603033

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.1395	U	0.149	0.149	3.00	0.303	pCi/L	03/09/23 13:03	03/17/23 18:29	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*87.1*		*30 - 110*	*03/09/23 13:03*	*03/17/23 18:29*	*1*
Y Carrier	*81.1*		*30 - 110*	*03/09/23 13:03*	*03/17/23 18:29*	*1*

Lab Sample ID: LCS 160-603033/2-A
Matrix: Water
Analysis Batch: 604031

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 603033

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.35	6.881		0.800	3.00	0.299	pCi/L	94	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*79.1*		*30 - 110*
Y Carrier	*82.2*		*30 - 110*

Method: 905 - Strontium-90 (GFPC) (Continued)

Lab Sample ID: LCSD 160-603033/3-A
Matrix: Water
Analysis Batch: 604031

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 603033

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.35	7.495		0.858	3.00	0.360	pCi/L	102	75 - 125	0.37	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*80.1*		*30 - 110*
Y Carrier	*82.2*		*30 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-605783/1-A
Matrix: Water
Analysis Batch: 606300

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605783

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-38.29	U	176	176	500	335	pCi/L	03/31/23 16:36	04/05/23 09:13	1

Lab Sample ID: LCS 160-605783/2-A
Matrix: Water
Analysis Batch: 606300

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605783

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2090	2124		427	500	344	pCi/L	101	75 - 125		

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-605724/1-A
Matrix: Water
Analysis Batch: 606117

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605724

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.03149	U	0.08996	0.09003	1.00	0.148	pCi/L	03/30/23 15:31	04/04/23 20:40	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*92.8*		*30 - 110*	*03/30/23 15:31*	*04/04/23 20:40*	*1*

Lab Sample ID: LCS 160-605724/2-A
Matrix: Water
Analysis Batch: 606357

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605724

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	13.25		1.55	1.00	0.113	pCi/L	104	75 - 125		
Uranium-238			13.0	13.61		1.58	1.00	0.123	pCi/L	105	75 - 125		

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-4

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: LCS 160-605724/2-A
Matrix: Water
Analysis Batch: 606357

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605724

Tracer	LCS %Yield	LCS Qualifier	Limits
Uranium-232	92.1		30 - 110

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-4

Rad

Prep Batch: 603016

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	PrecSep-21	
MB 160-603016/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-603016/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-603016/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 603018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	PrecSep_0	
MB 160-603018/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-603018/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-603018/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 603033

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	PrecSep-7	
MB 160-603033/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-603033/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-603033/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 604735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	Fill_Geo-0	
MB 160-604735/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-604735/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 605724

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	ExtChrom	
MB 160-605724/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-605724/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 605783

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	LSC_Dist_Susp	
MB 160-605783/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-605783/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 606326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129011-1	Outfall011_20230225_Comp	Total/NA	Water	Evaporation	
MB 160-606326/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-606326/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-606326/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-4

Client Sample ID: Outfall011_20230225_Comp

Date Collected: 02/25/23 12:20
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129011-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Evaporation			199.97 mL	1.0 g	606326	04/06/23 10:28	MST	EET SL
Total/NA	Analysis	900.0		1			606895	04/11/23 06:09	SCB	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	604735	03/22/23 16:26	SEH	EET SL
Total/NA	Analysis	901.1		1			605602	03/30/23 08:10	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	PrecSep-21			248.60 mL	1.0 g	603016	03/10/23 07:26	DJP	EET SL
Total/NA	Analysis	903.0		1			606563	04/07/23 19:32	EMH	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			248.60 mL	1.0 g	603018	03/10/23 07:28	DJP	EET SL
Total/NA	Analysis	904.0		1			605097	03/27/23 12:34	FLC	EET SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	PrecSep-7			498.96 mL	1.0 g	603033	03/09/23 13:03	DJP	EET SL
Total/NA	Analysis	905		1			604030	03/17/23 18:33	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	LSC_Dist_Susp			96.55 mL	1.0 g	605783	03/31/23 16:36	SEH	EET SL
Total/NA	Analysis	906.0		1			606300	04/05/23 14:39	REV	EET SL
	Instrument ID: LSCTEAL									
Total/NA	Prep	ExtChrom			101.1 mL	1.0 mL	605724	03/30/23 15:31	CMM	EET SL
Total/NA	Analysis	A-01-R		1			606070	04/04/23 20:42	EJS	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129011-4
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	06-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-23
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-4

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy
EPA = US Environmental Protection Agency
None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 011 - Comp

Job ID: 570-129011-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129011-1	Outfall011_20230225_Comp	Water	02/25/23 12:20	02/27/23 18:00

129011

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-129011 Chain of Custody

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011 018] Outfall 011 Comp
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue Suite #100 Tustin, CA 92780 Tel. 714-895-5494 **ECI Project #57013187**	**Project Manager:** Katherine Miller 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Field Manager:** Mark Dominick 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

									ANALYSIS REQUIRED															
									R	R	R	R	R	R	R	R	R	R	R	C		
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals (E200.8) Zn (E200.8) Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl- SO_4, Nitrate-N Nitrite-N NO3+NO2-N Perchlorate (E300)	Turbidity TDS (SM2540C/E160.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)	Total Recoverable Metals (E200.8) Mn, Fe			Comments
Outfall 011	Outfall011_20230225_Comp	2/25/2023 1220	WM	500 mL Poly	1	HNO_3	90	Yes	X										X	X			Outfall 011 analyze for Mn and Fe.
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	1L Poly	1	None	115	No			X												
			WM	500 mL Poly	2	None	120	No				X											
			WM	500 mL Poly	2	None	130	No					X										48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X									48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X							
			WM	1 L Glass Amber	2	None	170	No									X						
			WM	1 L Glass Amber	2	None	180	No										X					
			WM	1L Poly	1	None	185	No							X								
	Outfall011_20230225_Comp_Extra	2/25/2023 1220	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	500 mL Poly	2	None	120	No				H											Hold
			WM	500 mL Poly	2	None	130	No					H										Hold
			WM	1 L Glass Amber	2	None	170	No									H						Hold
			WM	1 L Glass Amber	2	None	180	No										H					Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	2.27.2023/1120	HA	[signature]	2/27/23 1120 EC
[signature]	2/27/23 1800	EC	[signature]	EC 2-27-23 18'00

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: __X__

2.6/2.5, 3.0/2.9 SC12

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4/17/2023

2019-2020 Rainy Season
Version 4

129011

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:	ANALYSIS REQUIRED
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp	R R R R R C
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel 714-895-5494 **ECI Project #57013187**	Project Manager: Katherine Miller 520.289.8606 520.904.6944 (cell)	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	
Sampler: Adrian Mobeka		

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals. (E200.8) Zn (E200.8) Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0) Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	Total Dissolved Metals. Mercury (E245.1)	Total Dissolved Metals (E200.8): Mn, Fe						Comments
Outfall 011	Outfall011_20230225_Comp_F	2/25/2023 1220	WM	1L Poly	1	None	200	Yes	X					X						Filter and preserve w/in 24hrs of receipt at lab. Outfall 011 analyze for Mn and Fe.
			WM	borosilicate vials	1	None	320	No					X							Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall011_20230225_Comp	2/25/2023 1220	WM	500 mL Poly	1	NaOH	220	No		X										
			WM	2.5 Gal Cube	1	None	225	No			X									Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No												
			WM	1 Gal Cube	6	None	235	No				X								Only test if first or second rain events of the year Deliver to ABC Labs in Ventura, CA.

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	2-27-2023/1120	H.A	[signature]	2/27/23 1120 EC
[signature]	2/27/23 1800	EC	[signature] EC	2-27-23 18:00
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

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4/17/2023

2019-2020 Rainy Season
Version 4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208607.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129011-4
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall 011 - Comp	Project #: 57013187			
Site:	SSOW#:			

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	906.0/LSC_Dist_Susp Tritium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall011_20230225_Comp (570-129011-1)	2/25/23	12:20 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	FED EX	02/28/23 9:23	EC	FED EX		
	Relinquished by: FED EX	Date/Time:	Company	Received by: Dena Worthington	Date/Time: MAR 0 1 2023 0900	Company EMSL
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129011-4

Login Number: 129011
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129011-4

Login Number: 129011
List Number: 3
Creator: Booker, Autumn R

List Source: Eurofins St. Louis
List Creation: 03/02/23 12:00 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/23/2023 4:15:27 PM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall - 011 Grab

JOB NUMBER

570-131178-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Eurofins Calscience

Job Notes

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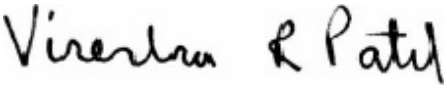
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-131178-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Grab

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131178-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131178-1

Comments
No additional comments.

Receipt
The samples were received on 3/15/2023 5:35 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.8º C.

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-312209. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 1664A: The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-312914.
Method: 1664.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131178-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Grab

Client Sample ID: Outfall011_20230314_Grab
Lab Sample ID: 570-131178-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
HEM (Oil & Grease)	2.8		0.99	0.50	mg/L	1		1664A	Total/NA
Specific Conductance	240		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA

Client Sample ID: TB-20230314
Lab Sample ID: 570-131178-2

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: Outfall011_20230314_Grab **Lab Sample ID: 570-131178-1**
Date Collected: 03/14/23 15:30 **Matrix: Water**
Date Received: 03/15/23 17:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/16/23 16:35	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/16/23 16:35	1
Trichloroethene	ND		0.50	0.17	ug/L			03/16/23 16:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*60 - 140*		*03/16/23 16:35*	*1*
Toluene-d8 (Surr)	*98*		*60 - 140*		*03/16/23 16:35*	*1*
Dibromofluoromethane (Surr)	*87*		*60 - 140*		*03/16/23 16:35*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*60 - 140*		*03/16/23 16:35*	*1*

Client Sample ID: TB-20230314 **Lab Sample ID: 570-131178-2**
Date Collected: 03/14/23 15:30 **Matrix: Water**
Date Received: 03/15/23 17:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/16/23 15:51	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/16/23 15:51	1
Trichloroethene	ND		0.50	0.17	ug/L			03/16/23 15:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*60 - 140*		*03/16/23 15:51*	*1*
Toluene-d8 (Surr)	*100*		*60 - 140*		*03/16/23 15:51*	*1*
Dibromofluoromethane (Surr)	*91*		*60 - 140*		*03/16/23 15:51*	*1*
1,2-Dichloroethane-d4 (Surr)	*84*		*60 - 140*		*03/16/23 15:51*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-131178-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Grab

General Chemistry

Client Sample ID: Outfall011_20230314_Grab
Lab Sample ID: 570-131178-1
Date Collected: 03/14/23 15:30
Matrix: Water
Date Received: 03/15/23 17:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	**2.8**		0.99	0.50	mg/L		03/20/23 07:32	03/20/23 18:35	1
Specific Conductance (SM 2510B)	**240**		1.0	1.0	umhos/cm			03/22/23 16:05	1
Settleable Solids (SM 2540F)	ND		0.10	0.10	mL/L			03/16/23 14:03	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131178-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Grab

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	TOL	DBFM	DCA
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-131178-1	Outfall011_20230314_Grab	96	98	87	90
570-131178-2	TB-20230314	94	100	91	84
LCS 570-312209/1003	Lab Control Sample	94	99	92	94
LCSD 570-312209/4	Lab Control Sample Dup	93	101	91	85
MB 570-312209/6	Method Blank	95	99	88	86

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-312209/6
Matrix: Water
Analysis Batch: 312209

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/16/23 15:27	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/16/23 15:27	1
Trichloroethene	ND		0.50	0.17	ug/L			03/16/23 15:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*60 - 140*		*03/16/23 15:27*	*1*
Toluene-d8 (Surr)	*99*		*60 - 140*		*03/16/23 15:27*	*1*
Dibromofluoromethane (Surr)	*88*		*60 - 140*		*03/16/23 15:27*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*60 - 140*		*03/16/23 15:27*	*1*

Lab Sample ID: LCS 570-312209/1003
Matrix: Water
Analysis Batch: 312209

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1-Dichloroethene			10.0	8.45		ug/L		84	50 - 150		
1,2-Dichloroethane			10.0	8.97		ug/L		90	70 - 130		
Trichloroethene			10.0	9.36		ug/L		94	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*60 - 140*
Toluene-d8 (Surr)	*99*		*60 - 140*
Dibromofluoromethane (Surr)	*92*		*60 - 140*
1,2-Dichloroethane-d4 (Surr)	*94*		*60 - 140*

Lab Sample ID: LCSD 570-312209/4
Matrix: Water
Analysis Batch: 312209

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene			10.0	8.53		ug/L		85	50 - 150	1	32
1,2-Dichloroethane			10.0	9.26		ug/L		93	70 - 130	3	49
Trichloroethene			10.0	10.3		ug/L		103	65 - 135	10	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*60 - 140*
Toluene-d8 (Surr)	*101*		*60 - 140*
Dibromofluoromethane (Surr)	*91*		*60 - 140*
1,2-Dichloroethane-d4 (Surr)	*85*		*60 - 140*

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-312914/1-A
Matrix: Water
Analysis Batch: 313162

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 312914

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		1.0	0.51	mg/L		03/20/23 07:32	03/20/23 18:35	1

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: LCS 570-312914/2-A
Matrix: Water
Analysis Batch: 313162

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312914

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM (Oil & Grease)	40.0	35.6		mg/L		89	78 - 114

Lab Sample ID: LCSD 570-312914/3-A
Matrix: Water
Analysis Batch: 313162

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 312914

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM (Oil & Grease)	40.0	40.1		mg/L		100	78 - 114	12	18

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-313890/6
Matrix: Water
Analysis Batch: 313890

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/22/23 16:03	1

Lab Sample ID: 570-131178-1 DU
Matrix: Water
Analysis Batch: 313890

Client Sample ID: Outfall011_20230314_Grab
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Specific Conductance	240		239		umhos/cm		0.8	25

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131178-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Grab

GC/MS VOA

Analysis Batch: 312209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131178-1	Outfall011_20230314_Grab	Total/NA	Water	624.1	
570-131178-2	TB-20230314	Total/NA	Water	624.1	
MB 570-312209/6	Method Blank	Total/NA	Water	624.1	
LCS 570-312209/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-312209/4	Lab Control Sample Dup	Total/NA	Water	624.1	

General Chemistry

Analysis Batch: 312256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131178-1	Outfall011_20230314_Grab	Total/NA	Water	SM 2540F	

Prep Batch: 312914

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131178-1	Outfall011_20230314_Grab	Total/NA	Water	1664A	
MB 570-312914/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-312914/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-312914/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 313162

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131178-1	Outfall011_20230314_Grab	Total/NA	Water	1664A	312914
MB 570-312914/1-A	Method Blank	Total/NA	Water	1664A	312914
LCS 570-312914/2-A	Lab Control Sample	Total/NA	Water	1664A	312914
LCSD 570-312914/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	312914

Analysis Batch: 313890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131178-1	Outfall011_20230314_Grab	Total/NA	Water	SM 2510B	
MB 570-313890/6	Method Blank	Total/NA	Water	SM 2510B	
570-131178-1 DU	Outfall011_20230314_Grab	Total/NA	Water	SM 2510B	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-131178-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Grab

Client Sample ID: Outfall011_20230314_Grab
Lab Sample ID: 570-131178-1
Date Collected: 03/14/23 15:30
Matrix: Water
Date Received: 03/15/23 17:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	312209	03/16/23 16:35	N1A	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Prep	1664A			1013 mL	1000 mL	312914	03/20/23 07:32	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			313162	03/20/23 18:35	USUL	EET CAL 4
	Instrument ID: NO EQUIQ									
Total/NA	Analysis	SM 2510B		1			313890	03/22/23 16:05	BDH9	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	312256	03/16/23 14:03	GG0B	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB-20230314
Lab Sample ID: 570-131178-2
Date Collected: 03/14/23 15:30
Matrix: Water
Date Received: 03/15/23 17:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	312209	03/16/23 15:51	N1A	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131178-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Grab

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131178-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Grab

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4

Protocol References:

1664A = EPA-821-98-002

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131178-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Grab

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131178-1	Outfall011_20230314_Grab	Water	03/14/23 15:30	03/15/23 17:35
570-131178-2	TB-20230314	Water	03/14/23 15:30	03/15/23 17:35

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-131178 Chain of Custody

Loc: 570
131178

CDBPJ6UK

Client Name/Address:	Project:	Field Readings	Meter serial #
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Grab	Field Readings: (Include units) Time of Readings: 1530	
Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 **ECI Project #57013187**		DO 27.56 mg/L pH 6.68 pH unit Temp 56.0 °C/(F)	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)		
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	Field readings QC Checked by: MD Date/Time: 3-14-2023/1600	

ANALYSIS REQUIRED (R R R R)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Oil & Grease (E1664A-HEM)	VOCs - only 1,1-DCE, 1,2-DCA, TCE (E624)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Comments
Outfall 011	Outfall011_20230314_Grab	3/14/2023 1530	WM	1 L Glass Amber	2	HCl	15	No	X				
			WM	40 mL VOA	3	HCl	30	No		X			
			WM	1L Poly	1	None	70	No			X		
			WM	500 mL Poly	1	None	75	No				X	
Trip Blanks	TB-20230314	3/14/2023 1530	WQ	40 mL VOA	3	HCl	30	No		X			

Legend: R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
MD	3.15.23/1335	H.A		3/15/23 1335 EC
	3/15/23 1735 EC		EC	3/15/23 17:35 EC

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

2.8/2.8 Soil

2019-2020 Rainy Season
Version 4

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131178-1

Login Number: 131178
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall - 011 Comp

JOB NUMBER

570-131456-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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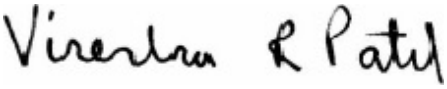

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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-131456-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131456-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131456-1

Comments
No additional comments.

Receipt
The samples were received on 3/16/2023 5:45 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.2º C and 3.4º C.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

HPLC/IC
Method 300.0: The following sample was diluted due to the nature of the sample matrix: Outfall011_20230316_Comp (570-131456-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 200.8: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-312912 and analytical batch 570-312977 were outside control limits for Iron. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: Outfall011_20230316_Comp_F (570-131456-2), Outfall011_20230316_Comp_F (570-131456-2[MS]) and Outfall011_20230316__Comp_F (570-131456-2[MSD]). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-313866. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. 608LL

Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-313228. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Method 625.1 Sim

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Comp

Job ID: 570-131456-1

Client Sample ID: Outfall011_20230316_Comp — Lab Sample ID: 570-131456-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.3		2.0	0.72	mg/L	2		300.0	Total/NA
Nitrate as N	0.16	J,DX	0.20	0.039	mg/L	2		300.0	Total/NA
Sulfate	12		2.0	0.47	mg/L	2		300.0	Total/NA
Nitrate Nitrite as N	0.16		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Cadmium	0.20	J,DX	1.0	0.13	ug/L	1		200.8	Total Recoverable
Copper	4.3		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	3200		20	3.7	ug/L	1		200.8	Total Recoverable
Lead	1.9		1.0	0.12	ug/L	1		200.8	Total Recoverable
Manganese	50		1.0	0.41	ug/L	1		200.8	Total Recoverable
Selenium	0.87	J,DX	2.0	0.52	ug/L	1		200.8	Total Recoverable
Zinc	16	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Ammonia	0.039	J,DX	0.075	0.032	mg/L	1		350.1	Total/NA
Turbidity	55		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Dissolved Solids	130		10	8.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	42		2.0	1.7	mg/L	1		SM 2540D	Total/NA
Biochemical Oxygen Demand	4.7		2.0	1.0	mg/L	1		SM 5210B	Total/NA

Client Sample ID: Outfall011_20230316_Comp_F — Lab Sample ID: 570-131456-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.13	J,DX BU	1.0	0.13	ug/L	1		200.8	Dissolved
Copper	2.6	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	130	BU	20	3.7	ug/L	1		200.8	Dissolved
Lead	0.20	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Manganese	2.6	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Selenium	0.69	J,DX BU	2.0	0.52	ug/L	1		200.8	Dissolved
Zinc	3.5	J,DX BU	20	2.8	ug/L	1		200.8	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: Outfall011_20230316_Comp
Lab Sample ID: 570-131456-1
Date Collected: 03/16/23 07:15
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		0.95	0.13	ug/L		03/22/23 05:11	03/23/23 22:15	1
2,4-Dinitrotoluene	ND		0.19	0.11	ug/L		03/22/23 05:11	03/23/23 22:15	1
Bis(2-ethylhexyl) phthalate	ND		4.7	3.4	ug/L		03/22/23 05:11	03/23/23 22:15	1
N-Nitrosodimethylamine	ND		0.19	0.18	ug/L		03/22/23 05:11	03/23/23 22:15	1
Pentachlorophenol	ND		0.95	0.80	ug/L		03/22/23 05:11	03/23/23 22:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*64*		*31 - 120*	*03/22/23 05:11*	*03/23/23 22:15*	*1*
Phenol-d6 (Surr)	*23*		*10 - 120*	*03/22/23 05:11*	*03/23/23 22:15*	*1*
p-Terphenyl-d14 (Surr)	*85*		*45 - 120*	*03/22/23 05:11*	*03/23/23 22:15*	*1*
2,4,6-Tribromophenol	*91*		*28 - 127*	*03/22/23 05:11*	*03/23/23 22:15*	*1*
2-Fluorophenol	*32*		*17 - 120*	*03/22/23 05:11*	*03/23/23 22:15*	*1*
Nitrobenzene-d5	*65*		*27 - 120*	*03/22/23 05:11*	*03/23/23 22:15*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 608.3 - Organochlorine Pesticides in Water

Client Sample ID: Outfall011_20230316_Comp
Lab Sample ID: 570-131456-1
Date Collected: 03/16/23 07:15
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		03/22/23 15:44	03/24/23 03:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*53*		*20 - 139*	*03/22/23 15:44*	*03/24/23 03:57*	*1*
DCB Decachlorobiphenyl (Surr)	*23*		*20 - 154*	*03/22/23 15:44*	*03/24/23 03:57*	*1*

Client Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: Outfall011_20230316_Comp
Lab Sample ID: 570-131456-1
Date Collected: 03/16/23 07:15
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.3**		2.0	0.72	mg/L			03/17/23 04:10	2
Nitrite as N	ND		0.20	0.086	mg/L			03/17/23 04:10	2
Nitrate as N	**0.16**	**J,DX**	0.20	0.039	mg/L			03/17/23 04:10	2
Sulfate	**12**		2.0	0.47	mg/L			03/17/23 04:10	2

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: Outfall011_20230316_Comp
Lab Sample ID: 570-131456-1
Date Collected: 03/16/23 07:15
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/18/23 00:18	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: Outfall011_20230316_Comp
Lab Sample ID: 570-131456-1
Date Collected: 03/16/23 07:15
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	0.16		0.10	0.020	mg/L			03/24/23 10:42	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: Outfall011_20230316_Comp
Lab Sample ID: 570-131456-1
Date Collected: 03/16/23 07:15
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.20	J,DX	1.0	0.13	ug/L		03/20/23 07:23	03/20/23 10:30	1
Copper	4.3		2.0	0.32	ug/L		03/20/23 07:23	03/20/23 10:30	1
Iron	3200		20	3.7	ug/L		03/20/23 07:23	03/20/23 10:30	1
Lead	1.9		1.0	0.12	ug/L		03/20/23 07:23	03/20/23 10:30	1
Manganese	50		1.0	0.41	ug/L		03/20/23 07:23	03/20/23 10:30	1
Selenium	0.87	J,DX	2.0	0.52	ug/L		03/20/23 07:23	03/20/23 10:30	1
Zinc	16	J,DX	20	2.8	ug/L		03/20/23 07:23	03/20/23 10:30	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: Outfall011_20230316_Comp_F
Lab Sample ID: 570-131456-2
Date Collected: 03/16/23 07:15
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.13	J,DX BU	1.0	0.13	ug/L			03/17/23 11:23	1
Copper	2.6	BU	2.0	0.32	ug/L			03/17/23 11:23	1
Iron	130	BU	20	3.7	ug/L			03/17/23 11:23	1
Lead	0.20	J,DX BU	1.0	0.12	ug/L			03/17/23 11:23	1
Manganese	2.6	BU	1.0	0.41	ug/L			03/17/23 11:23	1
Selenium	0.69	J,DX BU	2.0	0.52	ug/L			03/17/23 11:23	1
Zinc	3.5	J,DX BU	20	2.8	ug/L			03/17/23 11:23	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: Outfall011_20230316_Comp
Lab Sample ID: 570-131456-1
Date Collected: 03/16/23 07:15
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/20/23 23:29	03/21/23 16:06	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: Outfall011_20230316_Comp_F
Date Collected: 03/16/23 07:15
Date Received: 03/16/23 17:45

Lab Sample ID: 570-131456-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	BU	0.20	0.12	ug/L		03/16/23 21:34	03/20/23 14:27	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

General Chemistry

Client Sample ID: Outfall011_20230316_Comp
Date Collected: 03/16/23 07:15
Date Received: 03/16/23 17:45

Lab Sample ID: 570-131456-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	**0.039**	**J,DX**	0.075	0.032	mg/L		03/27/23 14:02	03/27/23 16:22	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			03/27/23 14:36	1
Turbidity (SM 2130B)	**55**		0.05	0.05	NTU			03/17/23 13:44	1
Total Dissolved Solids (SM 2540C)	**130**		10	8.7	mg/L			03/20/23 21:08	1
Total Suspended Solids (SM 2540D)	**42**		2.0	1.7	mg/L			03/22/23 14:52	1
Biochemical Oxygen Demand (SM 5210B)	**4.7**		2.0	1.0	mg/L		03/17/23 12:09	03/17/23 12:58	1
MBAS (SM 5540C)	ND		0.20	0.050	mg/L		03/16/23 19:30	03/16/23 20:56	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Job ID: 570-131456-1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	PHL6	TPHd14	TBP	2FP	NBZ
Lab Sample ID	Client Sample ID	(31-120)	(10-120)	(45-120)	(28-127)	(17-120)	(27-120)
570-131456-1	Outfall011_20230316_Comp	64	23	85	91	32	65
LCS 570-313228/2-A	Lab Control Sample	54	26	91	56	35	53
LCSD 570-313228/3-A	Lab Control Sample Dup	69	30	97	68	42	55
MB 570-313228/1-A	Method Blank	49	22	76	62	33	56

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX2	DCB1
Lab Sample ID	Client Sample ID	(20-139)	(20-154)
570-131456-1	Outfall011_20230316_Comp	53	23
MB 570-313866/1-A	Method Blank	67	77

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl (Surr)

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX1	DCB1
Lab Sample ID	Client Sample ID	(20-139)	(20-154)
LCS 570-313866/2-A	Lab Control Sample	58	72
LCSD 570-313866/3-A	Lab Control Sample Dup	67	79

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-313228/1-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 313228

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		03/21/23 06:13	03/23/23 12:27	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		03/21/23 06:13	03/23/23 12:27	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		03/21/23 06:13	03/23/23 12:27	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		03/21/23 06:13	03/23/23 12:27	1
Pentachlorophenol	ND		1.0	0.84	ug/L		03/21/23 06:13	03/23/23 12:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*49*		*31 - 120*	*03/21/23 06:13*	*03/23/23 12:27*	*1*
Phenol-d6 (Surr)	*22*		*10 - 120*	*03/21/23 06:13*	*03/23/23 12:27*	*1*
p-Terphenyl-d14 (Surr)	*76*		*45 - 120*	*03/21/23 06:13*	*03/23/23 12:27*	*1*
2,4,6-Tribromophenol	*62*		*28 - 127*	*03/21/23 06:13*	*03/23/23 12:27*	*1*
2-Fluorophenol	*33*		*17 - 120*	*03/21/23 06:13*	*03/23/23 12:27*	*1*
Nitrobenzene-d5	*56*		*27 - 120*	*03/21/23 06:13*	*03/23/23 12:27*	*1*

Lab Sample ID: LCS 570-313228/2-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 313228

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4,6-Trichlorophenol	20.0	10.4		ug/L		52	52 - 129
2,4-Dinitrotoluene	20.0	14.2		ug/L		71	48 - 127
Bis(2-ethylhexyl) phthalate	20.0	20.0		ug/L		100	29 - 137
N-Nitrosodimethylamine	20.0	7.21		ug/L		36	20 - 120
Pentachlorophenol	20.0	8.07		ug/L		40	38 - 152

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*54*		*31 - 120*
Phenol-d6 (Surr)	*26*		*10 - 120*
p-Terphenyl-d14 (Surr)	*91*		*45 - 120*
2,4,6-Tribromophenol	*56*		*28 - 127*
2-Fluorophenol	*35*		*17 - 120*
Nitrobenzene-d5	*53*		*27 - 120*

Lab Sample ID: LCSD 570-313228/3-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 313228

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4,6-Trichlorophenol	20.0	12.9		ug/L		64	52 - 129	21	35
2,4-Dinitrotoluene	20.0	13.4		ug/L		67	48 - 127	6	25
Bis(2-ethylhexyl) phthalate	20.0	22.2		ug/L		111	29 - 137	10	50
N-Nitrosodimethylamine	20.0	8.51		ug/L		43	20 - 120	17	21
Pentachlorophenol	20.0	9.04		ug/L		45	38 - 152	11	52

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*69*		*31 - 120*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-313228/3-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 313228

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Phenol-d6 (Surr)	*30*		*10 - 120*
p-Terphenyl-d14 (Surr)	*97*		*45 - 120*
2,4,6-Tribromophenol	*68*		*28 - 127*
2-Fluorophenol	*42*		*17 - 120*
Nitrobenzene-d5	*55*		*27 - 120*

Method: 608.3 - Organochlorine Pesticides in Water

Lab Sample ID: MB 570-313866/1-A
Matrix: Water
Analysis Batch: 313951

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 313866

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		03/22/23 15:44	03/23/23 23:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*67*		*20 - 139*	*03/22/23 15:44*	*03/23/23 23:56*	*1*
DCB Decachlorobiphenyl (Surr)	*77*		*20 - 154*	*03/22/23 15:44*	*03/23/23 23:56*	*1*

Lab Sample ID: LCS 570-313866/2-A
Matrix: Water
Analysis Batch: 313951

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 313866

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
alpha-BHC			0.0333	0.0218		ug/L		65	37 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*58*		*20 - 139*
DCB Decachlorobiphenyl (Surr)	*72*		*20 - 154*

Lab Sample ID: LCSD 570-313866/3-A
Matrix: Water
Analysis Batch: 313951

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 313866

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
alpha-BHC			0.0333	0.0249		ug/L		75	37 - 140	13	36

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*67*		*20 - 139*
DCB Decachlorobiphenyl (Surr)	*79*		*20 - 154*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-312052/5
Matrix: Water
Analysis Batch: 312052

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			03/16/23 07:14	1
Sulfate	ND		1.0	0.24	mg/L			03/16/23 07:14	1

Lab Sample ID: LCS 570-312052/6
Matrix: Water
Analysis Batch: 312052

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	50.2		mg/L		100	90 - 110
Sulfate	50.0	49.1		mg/L		98	90 - 110

Lab Sample ID: LCSD 570-312052/7
Matrix: Water
Analysis Batch: 312052

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	50.2		mg/L		100	90 - 110	0	15
Sulfate	50.0	49.1		mg/L		98	90 - 110	0	15

Lab Sample ID: MB 570-312053/5
Matrix: Water
Analysis Batch: 312053

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			03/16/23 07:14	1
Nitrate as N	ND		0.10	0.020	mg/L			03/16/23 07:14	1

Lab Sample ID: LCS 570-312053/6
Matrix: Water
Analysis Batch: 312053

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.44		mg/L		98	90 - 110
Nitrate as N	5.00	5.02		mg/L		100	90 - 110

Lab Sample ID: LCSD 570-312053/7
Matrix: Water
Analysis Batch: 312053

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.45		mg/L		98	90 - 110	1	15
Nitrate as N	5.00	5.02		mg/L		100	90 - 110	0	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-312587/7
Matrix: Water
Analysis Batch: 312587

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/17/23 18:02	1

Lab Sample ID: LCS 570-312587/8
Matrix: Water
Analysis Batch: 312587

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	24.9		ug/L		100	85 - 115

Lab Sample ID: LCSD 570-312587/9
Matrix: Water
Analysis Batch: 312587

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	24.9		ug/L		99	85 - 115	0	15

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-312912/1-A
Matrix: Water
Analysis Batch: 312977

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 312912

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		03/20/23 07:23	03/20/23 10:55	1
Copper	ND		2.0	0.32	ug/L		03/20/23 07:23	03/20/23 10:55	1
Iron	ND		20	3.7	ug/L		03/20/23 07:23	03/20/23 10:55	1
Lead	ND		1.0	0.12	ug/L		03/20/23 07:23	03/20/23 10:55	1
Manganese	ND		1.0	0.41	ug/L		03/20/23 07:23	03/20/23 10:55	1
Selenium	ND		2.0	0.52	ug/L		03/20/23 07:23	03/20/23 10:55	1
Zinc	ND		20	2.8	ug/L		03/20/23 07:23	03/20/23 10:55	1

Lab Sample ID: LCS 570-312912/2-A
Matrix: Water
Analysis Batch: 312977

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 312912

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	76.5		ug/L		96	85 - 115
Copper	80.0	73.2		ug/L		91	85 - 115
Iron	800	776		ug/L		97	85 - 115
Lead	80.0	70.6		ug/L		88	85 - 115
Manganese	80.0	76.4		ug/L		96	85 - 115
Selenium	80.0	76.1		ug/L		95	85 - 115
Zinc	80.0	73.6		ug/L		92	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-312912/3-A
Matrix: Water
Analysis Batch: 312977

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 312912

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium			80.0	76.2		ug/L		95	85 - 115	0	20
Copper			80.0	75.3		ug/L		94	85 - 115	3	20
Iron			800	781		ug/L		98	85 - 115	1	20
Lead			80.0	72.7		ug/L		91	85 - 115	3	20
Manganese			80.0	77.5		ug/L		97	85 - 115	1	20
Selenium			80.0	75.8		ug/L		95	85 - 115	0	20
Zinc			80.0	75.5		ug/L		94	85 - 115	3	20

Lab Sample ID: 570-131456-1 MS
Matrix: Water
Analysis Batch: 312977

Client Sample ID: Outfall011_20230316_Comp
Prep Type: Total Recoverable
Prep Batch: 312912

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Cadmium	0.20	J,DX	80.0	78.0		ug/L		97	80 - 120		
Copper	4.3		80.0	80.5		ug/L		95	80 - 120		
Iron	3200		800	3540	LN	ug/L		49	80 - 120		
Lead	1.9		80.0	75.6		ug/L		92	80 - 120		
Manganese	50		80.0	129		ug/L		99	80 - 120		
Selenium	0.87	J,DX	80.0	75.8		ug/L		94	80 - 120		
Zinc	16	J,DX	80.0	92.0		ug/L		95	80 - 120		

Lab Sample ID: 570-131456-1 MSD
Matrix: Water
Analysis Batch: 312977

Client Sample ID: Outfall011_20230316_Comp
Prep Type: Total Recoverable
Prep Batch: 312912

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	0.20	J,DX	80.0	77.7		ug/L		97	80 - 120	0	20
Copper	4.3		80.0	82.0		ug/L		97	80 - 120	2	20
Iron	3200		800	3610	LN	ug/L		58	80 - 120	2	20
Lead	1.9		80.0	76.0		ug/L		93	80 - 120	0	20
Manganese	50		80.0	130		ug/L		101	80 - 120	1	20
Selenium	0.87	J,DX	80.0	76.0		ug/L		94	80 - 120	0	20
Zinc	16	J,DX	80.0	90.1		ug/L		93	80 - 120	2	20

Lab Sample ID: MB 570-312519/1-A
Matrix: Water
Analysis Batch: 312599

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L			03/17/23 11:16	1
Copper	ND		2.0	0.32	ug/L			03/17/23 11:16	1
Iron	ND		20	3.7	ug/L			03/17/23 11:16	1
Lead	ND		1.0	0.12	ug/L			03/17/23 11:16	1
Manganese	ND		1.0	0.41	ug/L			03/17/23 11:16	1
Selenium	ND		2.0	0.52	ug/L			03/17/23 11:16	1
Zinc	ND		20	2.8	ug/L			03/17/23 11:16	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-312519/2-A
Matrix: Water
Analysis Batch: 312599

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	79.0		ug/L		99	85 - 115
Copper	80.0	78.7		ug/L		98	85 - 115
Iron	800	800		ug/L		100	85 - 115
Lead	80.0	75.2		ug/L		94	85 - 115
Manganese	80.0	81.8		ug/L		102	85 - 115
Selenium	80.0	79.5		ug/L		99	85 - 115
Zinc	80.0	77.0		ug/L		96	85 - 115

Lab Sample ID: LCSD 570-312519/3-A
Matrix: Water
Analysis Batch: 312599

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	79.4		ug/L		99	85 - 115	0	20
Copper	80.0	78.8		ug/L		98	85 - 115	0	20
Iron	800	815		ug/L		102	85 - 115	2	20
Lead	80.0	76.2		ug/L		95	85 - 115	1	20
Manganese	80.0	81.4		ug/L		102	85 - 115	0	20
Selenium	80.0	78.2		ug/L		98	85 - 115	2	20
Zinc	80.0	77.9		ug/L		97	85 - 115	1	20

Lab Sample ID: 570-131456-2 MS
Matrix: Water
Analysis Batch: 312599

Client Sample ID: Outfall011_20230316_Comp_F
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	0.13	J,DX BU	80.0	72.5	BU	ug/L		91	80 - 120
Copper	2.6	BU	80.0	74.4	BU	ug/L		90	80 - 120
Iron	130	BU	800	862	BU	ug/L		92	80 - 120
Lead	0.20	J,DX BU	80.0	69.4	BU	ug/L		87	80 - 120
Manganese	2.6	BU	80.0	77.4	BU	ug/L		94	80 - 120
Selenium	0.69	J,DX BU	80.0	76.6	BU	ug/L		95	80 - 120
Zinc	3.5	J,DX BU	80.0	74.1	BU	ug/L		88	80 - 120

Lab Sample ID: 570-131456-2 MSD
Matrix: Water
Analysis Batch: 312599

Client Sample ID: Outfall011_20230316__Comp_F
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	0.13	J,DX BU	80.0	73.9	BU	ug/L		92	80 - 120	2	20
Copper	2.6	BU	80.0	74.7	BU	ug/L		90	80 - 120	0	20
Iron	130	BU	800	873	BU	ug/L		93	80 - 120	1	20
Lead	0.20	J,DX BU	80.0	70.9	BU	ug/L		88	80 - 120	2	20
Manganese	2.6	BU	80.0	77.5	BU	ug/L		94	80 - 120	0	20
Selenium	0.69	J,DX BU	80.0	76.5	BU	ug/L		95	80 - 120	0	20
Zinc	3.5	J,DX BU	80.0	74.6	BU	ug/L		89	80 - 120	1	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-313200/1-A
Matrix: Water
Analysis Batch: 313501
Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 313200

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/20/23 23:29	03/21/23 15:55	1

Lab Sample ID: LCS 570-313200/2-A
Matrix: Water
Analysis Batch: 313501
Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 313200

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	8.39		ug/L		105	85 - 115

Lab Sample ID: LCSD 570-313200/3-A
Matrix: Water
Analysis Batch: 313501
Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 313200

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	8.00	7.96		ug/L		100	85 - 115	5	10

Lab Sample ID: MB 570-312367/1-B
Matrix: Water
Analysis Batch: 313082
Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 312369

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/16/23 21:34	03/20/23 14:31	1

Lab Sample ID: LCS 570-312367/2-B
Matrix: Water
Analysis Batch: 313082
Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 312369

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	8.11		ug/L		101	85 - 115

Lab Sample ID: LCSD 570-312367/3-B
Matrix: Water
Analysis Batch: 313082
Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 312369

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	8.00	8.01		ug/L		100	85 - 115	1	10

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-315112/5-A
Matrix: Water
Analysis Batch: 315123
Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 315112

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		03/27/23 14:02	03/27/23 15:47	1

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: LCS 570-315112/6-A
Matrix: Water
Analysis Batch: 315123

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315112

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	0.500	0.494		mg/L		99	90 - 110

Lab Sample ID: LCSD 570-315112/7-A
Matrix: Water
Analysis Batch: 315123

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 315112

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	0.500	0.500		mg/L		100	90 - 110	1	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-309190/11
Matrix: Water
Analysis Batch: 309190

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			03/27/23 12:56	1

Lab Sample ID: LCS 570-309190/12
Matrix: Water
Analysis Batch: 309190

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	259		ug/L		104	90 - 110

Lab Sample ID: LCSD 570-309190/13
Matrix: Water
Analysis Batch: 309190

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	250	271		ug/L		109	90 - 110	5	20

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-312592/3
Matrix: Water
Analysis Batch: 312592

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-313188/1
Matrix: Water
Analysis Batch: 313188

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			03/20/23 21:08	1

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: LCS 570-313188/2
Matrix: Water
Analysis Batch: 313188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	1040		mg/L		104	84 - 108

Lab Sample ID: LCSD 570-313188/3
Matrix: Water
Analysis Batch: 313188

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1040		mg/L		104	84 - 108	0	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-313845/1
Matrix: Water
Analysis Batch: 313845

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			03/22/23 14:52	1

Lab Sample ID: LCS 570-313845/2
Matrix: Water
Analysis Batch: 313845

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	95.0		mg/L		95	77 - 116

Lab Sample ID: LCSD 570-313845/3
Matrix: Water
Analysis Batch: 313845

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	96.0		mg/L		96	77 - 116	1	10

Lab Sample ID: 570-131456-1 DU
Matrix: Water
Analysis Batch: 313845

Client Sample ID: Outfall011_20230316_Comp
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	42		43.8		mg/L		4	10

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: LCS 570-312571/2-A
Matrix: Water
Analysis Batch: 314247

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312571

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	199	196		mg/L		99	84.6 - 115.4

Method: SM 5210B - BOD, 5-Day (Continued)

Lab Sample ID: USB 570-314247/2
Matrix: Water
Analysis Batch: 314247

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L			03/17/23 12:13	1

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-312366/5-A
Matrix: Water
Analysis Batch: 312365

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 312366

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.20	0.050	mg/L		03/16/23 19:30	03/16/23 20:46	1

Lab Sample ID: LCS 570-312366/6-A
Matrix: Water
Analysis Batch: 312365

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312366

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
MBAS			0.500	0.433		mg/L		87	83 - 122		

Lab Sample ID: LCSD 570-312366/7-A
Matrix: Water
Analysis Batch: 312365

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 312366

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS			0.500	0.433		mg/L		87	83 - 122	0	10

GC/MS Semi VOA

Prep Batch: 313228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	625	
MB 570-313228/1-A	Method Blank	Total/NA	Water	625	
LCS 570-313228/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-313228/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 314108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	625.1 SIM	313228
MB 570-313228/1-A	Method Blank	Total/NA	Water	625.1 SIM	313228
LCS 570-313228/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	313228
LCSD 570-313228/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	313228

GC Semi VOA

Prep Batch: 313866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	608	
MB 570-313866/1-A	Method Blank	Total/NA	Water	608	
LCS 570-313866/2-A	Lab Control Sample	Total/NA	Water	608	
LCSD 570-313866/3-A	Lab Control Sample Dup	Total/NA	Water	608	

Analysis Batch: 313951

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-313866/1-A	Method Blank	Total/NA	Water	608.3	313866
LCS 570-313866/2-A	Lab Control Sample	Total/NA	Water	608.3	313866
LCSD 570-313866/3-A	Lab Control Sample Dup	Total/NA	Water	608.3	313866

Analysis Batch: 314256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	608.3	313866

HPLC/IC

Analysis Batch: 312052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	300.0	
MB 570-312052/5	Method Blank	Total/NA	Water	300.0	
LCS 570-312052/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-312052/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 312053

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	300.0	
MB 570-312053/5	Method Blank	Total/NA	Water	300.0	
LCS 570-312053/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-312053/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 312587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	314.0	
MB 570-312587/7	Method Blank	Total/NA	Water	314.0	

HPLC/IC (Continued)

Analysis Batch: 312587 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-312587/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-312587/9	Lab Control Sample Dup	Total/NA	Water	314.0	

Analysis Batch: 314475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	NO2NO3 Calc	

Metals

Filtration Batch: 312367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-2	Outfall011_20230316_Comp_F	Dissolved	Water	Filtration	
MB 570-312367/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-312367/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-312367/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	

Prep Batch: 312369

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-2	Outfall011_20230316_Comp_F	Dissolved	Water	245.1	312367
MB 570-312367/1-B	Method Blank	Dissolved	Water	245.1	312367
LCS 570-312367/2-B	Lab Control Sample	Dissolved	Water	245.1	312367
LCSD 570-312367/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	312367

Filtration Batch: 312519

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-2	Outfall011_20230316_Comp_F	Dissolved	Water	Filtration	
MB 570-312519/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-312519/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-312519/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-131456-2 MS	Outfall011_20230316_Comp_F	Dissolved	Water	Filtration	
570-131456-2 MSD	Outfall011_20230316__Comp_F	Dissolved	Water	Filtration	

Analysis Batch: 312599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-2	Outfall011_20230316_Comp_F	Dissolved	Water	200.8	312519
MB 570-312519/1-A	Method Blank	Dissolved	Water	200.8	312519
LCS 570-312519/2-A	Lab Control Sample	Dissolved	Water	200.8	312519
LCSD 570-312519/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	312519
570-131456-2 MS	Outfall011_20230316_Comp_F	Dissolved	Water	200.8	312519
570-131456-2 MSD	Outfall011_20230316__Comp_F	Dissolved	Water	200.8	312519

Prep Batch: 312912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total Recoverable	Water	200.8	
MB 570-312912/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-312912/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-312912/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-131456-1 MS	Outfall011_20230316_Comp	Total Recoverable	Water	200.8	
570-131456-1 MSD	Outfall011_20230316_Comp	Total Recoverable	Water	200.8	

Metals

Analysis Batch: 312977

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total Recoverable	Water	200.8	312912
MB 570-312912/1-A	Method Blank	Total Recoverable	Water	200.8	312912
LCS 570-312912/2-A	Lab Control Sample	Total Recoverable	Water	200.8	312912
LCSD 570-312912/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	312912
570-131456-1 MS	Outfall011_20230316_Comp	Total Recoverable	Water	200.8	312912
570-131456-1 MSD	Outfall011_20230316_Comp	Total Recoverable	Water	200.8	312912

Analysis Batch: 313082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-2	Outfall011_20230316_Comp_F	Dissolved	Water	245.1	312369
MB 570-312367/1-B	Method Blank	Dissolved	Water	245.1	312369
LCS 570-312367/2-B	Lab Control Sample	Dissolved	Water	245.1	312369
LCSD 570-312367/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	312369

Prep Batch: 313200

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	245.1	
MB 570-313200/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-313200/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-313200/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	

Analysis Batch: 313501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	245.1	313200
MB 570-313200/1-A	Method Blank	Total/NA	Water	245.1	313200
LCS 570-313200/2-A	Lab Control Sample	Total/NA	Water	245.1	313200
LCSD 570-313200/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	313200

General Chemistry

Analysis Batch: 309190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	Kelada 01	
MB 570-309190/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-309190/12	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-309190/13	Lab Control Sample Dup	Total/NA	Water	Kelada 01	

Analysis Batch: 312365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	SM 5540C	312366
MB 570-312366/5-A	Method Blank	Total/NA	Water	SM 5540C	312366
LCS 570-312366/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	312366
LCSD 570-312366/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	312366

Prep Batch: 312366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	SM 5540C	
MB 570-312366/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-312366/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-312366/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

General Chemistry

Prep Batch: 312571

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	BOD Prep	
LCS 570-312571/2-A	Lab Control Sample	Total/NA	Water	BOD Prep	

Analysis Batch: 312592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	SM 2130B	
LCSSRM 570-312592/3	Lab Control Sample	Total/NA	Water	SM 2130B	

Analysis Batch: 313188

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	SM 2540C	
MB 570-313188/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-313188/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-313188/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 313845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	SM 2540D	
MB 570-313845/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-313845/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-313845/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-131456-1 DU	Outfall011_20230316_Comp	Total/NA	Water	SM 2540D	

Analysis Batch: 314247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	SM 5210B	312571
USB 570-314247/2	Method Blank	Total/NA	Water	SM 5210B	
LCS 570-312571/2-A	Lab Control Sample	Total/NA	Water	SM 5210B	312571

Prep Batch: 315112

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	Distill/Ammonia	
MB 570-315112/5-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-315112/6-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-315112/7-A	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 315123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	350.1	315112
MB 570-315112/5-A	Method Blank	Total/NA	Water	350.1	315112
LCS 570-315112/6-A	Lab Control Sample	Total/NA	Water	350.1	315112
LCSD 570-315112/7-A	Lab Control Sample Dup	Total/NA	Water	350.1	315112

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Comp

Client Sample ID: Outfall011_20230316_Comp
Lab Sample ID: 570-131456-1
Date Collected: 03/16/23 07:15
Matrix: Water
Date Received: 03/16/23 17:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			1055.3 mL	2 mL	313228	03/22/23 05:11	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	314108	03/23/23 22:15	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Prep	608			1500 mL	1 mL	313866	03/22/23 15:44	OAJ3	EET CAL 4
Total/NA	Analysis	608.3		1	1 mL	1 mL	314256	03/24/23 03:57	N5Y3	EET CAL 4
	Instrument ID: GC52A									
Total/NA	Analysis	300.0		2	4 mL	4 mL	312052	03/17/23 04:10	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	300.0		2	4 mL	4 mL	312053	03/17/23 04:10	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	314.0		1	4 mL	4 mL	312587	03/18/23 00:18	PS	EET CAL 4
	Instrument ID: IC8									
Total/NA	Analysis	NO2NO3 Calc		1			314475	03/24/23 10:42	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total Recoverable	Prep	200.8			50 mL	50 mL	312912	03/20/23 07:23	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			312977	03/20/23 10:30	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Prep	245.1			25 mL	50 mL	313200	03/20/23 23:29	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			313501	03/21/23 16:06	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	315112	03/27/23 14:02	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	315123	03/27/23 16:22	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	309190	03/27/23 14:36	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			312592	03/17/23 13:44	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	313188	03/20/23 21:08	ZL7L	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	313845	03/22/23 14:52	BDH9	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Prep	BOD Prep					312571	03/17/23 12:09	U7UR	EET CAL 4
Total/NA	Analysis	SM 5210B		1	300 mL	300 mL	314247	03/17/23 12:58	U7UR	EET CAL 4
	Instrument ID: BOD3									
Total/NA	Prep	SM 5540C			100 mL	100 mL	312366	03/16/23 19:30	TXA8	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	312365	03/16/23 20:56	TXA8	EET CAL 4
	Instrument ID: UV8									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Comp

Client Sample ID: Outfall011_20230316_Comp_F
Lab Sample ID: 570-131456-2

Date Collected: 03/16/23 07:15
Matrix: Water
Date Received: 03/16/23 17:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	312519	03/17/23 10:23	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			312599	03/17/23 11:23	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	312367	03/16/23 21:15	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	312369	03/16/23 21:34	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			313082	03/20/23 14:27	C0YH	EET CAL 4
	Instrument ID: HG8									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method	Method Description	Protocol	Laboratory
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
608.3	Organochlorine Pesticides in Water	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 5210B	BOD, 5-Day	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
608	Liquid-Liquid Extraction (Separatory Funnel)	EPA	EET CAL 4
625	Liquid-Liquid Extraction	EPA	EET CAL 4
BOD Prep	Preparation, BOD	SM	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Job ID: 570-131456-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131456-1	Outfall011_20230316_Comp	Water	03/16/23 07:15	03/16/23 17:45
570-131456-2	Outfall011_20230316_Comp_F	Water	03/16/23 07:15	03/16/23 17:45

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-131456 Chain of Custody

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp
Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 **ECI Project #57013187**	**Project Manager: Katherine Miller** 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Field Manager: Mark Dominick** 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

									ANALYSIS REQUIRED															
									R	R	R	R	R	R	R	R	R	R	R	C		
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl-, SO_4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	Turbidity, TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)	Total Recoverable Metals: (E200.8): Mn, Fe			Comments
Outfall 011	Outfall011_20230316_Comp	3/16/2023 0715	WM	500 mL Poly	1	HNO_3	90	Yes	X										X	X			Outfall 011 analyze for Mn and Fe.
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	1L Poly	1	None	115	No			X												
			WM	500 mL Poly	2	None	120	No				X											
			WM	500 mL Poly	2	None	130	No					X										48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X									48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X							
			WM	1 L Glass Amber	2	None	170	No									X						
			WM	1 L Glass Amber	2	None	180	No										X					
			WM	1L Poly	1	None	185	No							X								

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
	3-16-2023/1205	H:A		3/16/23 1205 EC
Relinquished By	Date/Time:	Company:	Received By	Date/Time:
	3/16/23 1745	EC		3/16/23 17:45 EC
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

3.4/3.4 2.2/2.2 SC11

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:	ANALYSIS REQUIRED
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp	R R R R R C
Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 **ECI Project #57013187**		
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)		Total Dissolved Metals: Mercury (E245.1)	Total Dissolved Metals: (E200.7): Mn, Fe						Comments
Outfall 011	Outfall011_20230316_Comp_F	3/16/2023 0715	WM	1L Poly	1	None	200	Yes	X					X						Filter and preserve w/in 24hrs of receipt at lab. Outfall 011 analyze for Mn and Fe
			WM	borosilicate vials	2	None	320	No					X							Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall011_20230316_Comp	3/16/2023 0715	WM	500 mL Poly	1	NaOH	220	No		X										
			WM	2.5 Gel Cube	1	None	225	No			X									Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No												

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	3-16-2023/1205	H:A	[signature]	3/16/23 1205 EC
[signature]	3/16/23 1745	EC	[signature]	3/16/23 17:45 EC
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

2019-2020 Rainy Season
Version 4

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131456-1

Login Number: 131456
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/6/2023 4:14:23 PM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall - 011 Comp

JOB NUMBER

570-131456-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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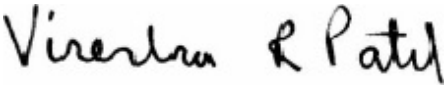
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131456-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131456-2

Comments
No additional comments.

Receipt
The samples were received on 3/16/2023 5:45 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.2º C and 3.4º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: Outfall011_20230316_Comp (570-131456-1), (CCV 320-665779/13), (LCS 320-665359/2-A), (LCSD 320-665359/3-A) and (MB 320-665359/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Comp

Client Sample ID: Outfall011_20230316_Comp
Lab Sample ID: 570-131456-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	0.0000015	J,DX q MB	0.000047	0.00000010	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000021	J,DX MB	0.000047	0.00000010	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000042	J,DX MB	0.000047	0.00000049	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000096	J,DX MB	0.000047	0.00000025	ug/L	1		1613B	Total/NA
OCDD	0.00043	MB	0.000095	0.0000011	ug/L	1		1613B	Total/NA
OCDF	0.000023	J,DX MB	0.000095	0.00000022	ug/L	1		1613B	Total/NA
Total HxCDD	0.000010	J,DX q MB	0.000047	0.000000095	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000053	J,DX q MB	0.000047	0.000000059	ug/L	1		1613B	Total/NA
Total HpCDD	0.000074	J,DX MB	0.000047	0.00000049	ug/L	1		1613B	Total/NA
Total HpCDF	0.000023	J,DX MB	0.000047	0.00000025	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: Outfall011_20230316_Comp **Lab Sample ID: 570-131456-1**
Date Collected: 03/16/23 07:15 **Matrix: Water**
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000095	0.00000018	ug/L		04/04/23 08:33	04/06/23 08:30	1
2,3,7,8-TCDF	ND		0.0000095	0.00000079	ug/L		04/04/23 08:33	04/06/23 08:30	1
1,2,3,7,8-PeCDD	ND		0.000047	0.00000046	ug/L		04/04/23 08:33	04/06/23 08:30	1
1,2,3,7,8-PeCDF	ND		0.000047	0.00000018	ug/L		04/04/23 08:33	04/06/23 08:30	1
2,3,4,7,8-PeCDF	ND		0.000047	0.00000020	ug/L		04/04/23 08:33	04/06/23 08:30	1
1,2,3,4,7,8-HxCDD	**0.0000015**	**J,DX q MB**	0.000047	0.00000010	ug/L		04/04/23 08:33	04/06/23 08:30	1
1,2,3,6,7,8-HxCDD	**0.0000021**	**J,DX MB**	0.000047	0.00000010	ug/L		04/04/23 08:33	04/06/23 08:30	1
1,2,3,7,8,9-HxCDD	ND		0.000047	0.00000095	ug/L		04/04/23 08:33	04/06/23 08:30	1
1,2,3,4,7,8-HxCDF	ND		0.000047	0.00000062	ug/L		04/04/23 08:33	04/06/23 08:30	1
1,2,3,6,7,8-HxCDF	ND		0.000047	0.00000063	ug/L		04/04/23 08:33	04/06/23 08:30	1
1,2,3,7,8,9-HxCDF	ND		0.000047	0.00000065	ug/L		04/04/23 08:33	04/06/23 08:30	1
2,3,4,6,7,8-HxCDF	ND		0.000047	0.00000059	ug/L		04/04/23 08:33	04/06/23 08:30	1
1,2,3,4,6,7,8-HpCDD	**0.000042**	**J,DX MB**	0.000047	0.0000049	ug/L		04/04/23 08:33	04/06/23 08:30	1
1,2,3,4,6,7,8-HpCDF	**0.0000096**	**J,DX MB**	0.000047	0.0000025	ug/L		04/04/23 08:33	04/06/23 08:30	1
1,2,3,4,7,8,9-HpCDF	ND		0.000047	0.0000027	ug/L		04/04/23 08:33	04/06/23 08:30	1
OCDD	**0.00043**	**MB**	0.000095	0.0000011	ug/L		04/04/23 08:33	04/06/23 08:30	1
OCDF	**0.000023**	**J,DX MB**	0.000095	0.0000022	ug/L		04/04/23 08:33	04/06/23 08:30	1
Total TCDD	ND		0.0000095	0.00000018	ug/L		04/04/23 08:33	04/06/23 08:30	1
Total TCDF	ND		0.0000095	0.00000079	ug/L		04/04/23 08:33	04/06/23 08:30	1
Total PeCDD	ND		0.000047	0.00000046	ug/L		04/04/23 08:33	04/06/23 08:30	1
Total PeCDF	ND		0.000047	0.00000018	ug/L		04/04/23 08:33	04/06/23 08:30	1
Total HxCDD	**0.000010**	**J,DX q MB**	0.000047	0.00000095	ug/L		04/04/23 08:33	04/06/23 08:30	1
Total HxCDF	**0.0000053**	**J,DX q MB**	0.000047	0.00000059	ug/L		04/04/23 08:33	04/06/23 08:30	1
Total HpCDD	**0.000074**	**J,DX MB**	0.000047	0.0000049	ug/L		04/04/23 08:33	04/06/23 08:30	1
Total HpCDF	**0.000023**	**J,DX MB**	0.000047	0.0000025	ug/L		04/04/23 08:33	04/06/23 08:30	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*64*		*25 - 164*	*04/04/23 08:33*	*04/06/23 08:30*	*1*
13C-2,3,7,8-TCDF	*57*		*24 - 169*	*04/04/23 08:33*	*04/06/23 08:30*	*1*
13C-1,2,3,7,8-PeCDD	*70*		*25 - 181*	*04/04/23 08:33*	*04/06/23 08:30*	*1*
13C-1,2,3,7,8-PeCDF	*63*		*24 - 185*	*04/04/23 08:33*	*04/06/23 08:30*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: Outfall011_20230316_Comp
Lab Sample ID: 570-131456-1
Date Collected: 03/16/23 07:15
Matrix: Water
Date Received: 03/16/23 17:45

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	64		21 - 178	04/04/23 08:33	04/06/23 08:30	1
13C-1,2,3,4,7,8-HxCDD	63		32 - 141	04/04/23 08:33	04/06/23 08:30	1
13C-1,2,3,6,7,8-HxCDD	63		28 - 130	04/04/23 08:33	04/06/23 08:30	1
13C-1,2,3,4,7,8-HxCDF	60		26 - 152	04/04/23 08:33	04/06/23 08:30	1
13C-1,2,3,6,7,8-HxCDF	61		26 - 123	04/04/23 08:33	04/06/23 08:30	1
13C-1,2,3,7,8,9-HxCDF	64		29 - 147	04/04/23 08:33	04/06/23 08:30	1
13C-2,3,4,6,7,8-HxCDF	62		28 - 136	04/04/23 08:33	04/06/23 08:30	1
13C-1,2,3,4,6,7,8-HpCDD	73		23 - 140	04/04/23 08:33	04/06/23 08:30	1
13C-1,2,3,4,6,7,8-HpCDF	59		28 - 143	04/04/23 08:33	04/06/23 08:30	1
13C-1,2,3,4,7,8,9-HpCDF	68		26 - 138	04/04/23 08:33	04/06/23 08:30	1
13C-OCDD	66		17 - 157	04/04/23 08:33	04/06/23 08:30	1
13C-OCDF	63		17 - 157	04/04/23 08:33	04/06/23 08:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	66		35 - 197	04/04/23 08:33	04/06/23 08:30	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Comp

Job ID: 570-131456-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (35-197)								
570-131456-1	Outfall011_20230316_Comp	66								
MB 320-665359/1-A	Method Blank	93								

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (31-191)								
LCS 320-665359/2-A	Lab Control Sample	91								
LCSD 320-665359/3-A	Lab Control Sample Dup	92								

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Job ID: 570-131456-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-131456-1	Outfall011_20230316_Comp	64	57	70	63	64	63	63	60
MB 320-665359/1-A	Method Blank	83	76	94	82	83	82	80	75

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-131456-1	Outfall011_20230316_Comp	61	64	62	73	59	68	66	63
MB 320-665359/1-A	Method Blank	76	81	78	90	74	83	89	83

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-665359/2-A	Lab Control Sample	82	77	94	80	84	81	81	75
LCSD 320-665359/3-A	Lab Control Sample Dup	78	72	89	77	79	76	74	70

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-665359/2-A	Lab Control Sample	76	81	78	92	74	82	84	80
LCSD 320-665359/3-A	Lab Control Sample Dup	69	75	72	88	70	79	86	80

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-665359/1-A
Matrix: Water
Analysis Batch: 665779

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 665359

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.000000089	ug/L		04/04/23 08:33	04/06/23 00:28	1
2,3,7,8-TCDF	ND		0.000010	0.000000014	ug/L		04/04/23 08:33	04/06/23 00:28	1
1,2,3,7,8-PeCDD	ND		0.000050	0.000000046	ug/L		04/04/23 08:33	04/06/23 00:28	1
1,2,3,7,8-PeCDF	ND		0.000050	0.000000026	ug/L		04/04/23 08:33	04/06/23 00:28	1
2,3,4,7,8-PeCDF	ND		0.000050	0.000000030	ug/L		04/04/23 08:33	04/06/23 00:28	1
1,2,3,4,7,8-HxCDD	0.00000230	J,DX q	0.000050	0.000000099	ug/L		04/04/23 08:33	04/06/23 00:28	1
1,2,3,6,7,8-HxCDD	0.00000148	J,DX q	0.000050	0.0000001 0	ug/L		04/04/23 08:33	04/06/23 00:28	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.000000092	ug/L		04/04/23 08:33	04/06/23 00:28	1
1,2,3,4,7,8-HxCDF	0.00000162	J,DX q	0.000050	0.0000001 4	ug/L		04/04/23 08:33	04/06/23 00:28	1
1,2,3,6,7,8-HxCDF	0.00000124	J,DX q	0.000050	0.0000001 4	ug/L		04/04/23 08:33	04/06/23 00:28	1
1,2,3,7,8,9-HxCDF	0.00000180	J,DX q	0.000050	0.0000001 4	ug/L		04/04/23 08:33	04/06/23 00:28	1
2,3,4,6,7,8-HxCDF	0.00000119	J,DX q	0.000050	0.0000001 3	ug/L		04/04/23 08:33	04/06/23 00:28	1
1,2,3,4,6,7,8-HpCDD	0.00000427	J,DX q	0.000050	0.0000002 1	ug/L		04/04/23 08:33	04/06/23 00:28	1
1,2,3,4,6,7,8-HpCDF	0.00000157	J,DX q	0.000050	0.0000001 2	ug/L		04/04/23 08:33	04/06/23 00:28	1
1,2,3,4,7,8,9-HpCDF	0.00000157	J,DX q	0.000050	0.0000001 4	ug/L		04/04/23 08:33	04/06/23 00:28	1
OCDD	0.0000139	J,DX q	0.00010	0.0000003 5	ug/L		04/04/23 08:33	04/06/23 00:28	1
OCDF	0.00000418	J,DX q	0.00010	0.0000002 2	ug/L		04/04/23 08:33	04/06/23 00:28	1
Total TCDD	0.00000498	J,DX	0.000010	0.000000089	ug/L		04/04/23 08:33	04/06/23 00:28	1
Total TCDF	ND		0.000010	0.000000014	ug/L		04/04/23 08:33	04/06/23 00:28	1
Total PeCDD	ND		0.000050	0.000000046	ug/L		04/04/23 08:33	04/06/23 00:28	1
Total PeCDF	ND		0.000050	0.000000026	ug/L		04/04/23 08:33	04/06/23 00:28	1
Total HxCDD	0.00000377	J,DX q	0.000050	0.000000092	ug/L		04/04/23 08:33	04/06/23 00:28	1
Total HxCDF	0.00000586	J,DX q	0.000050	0.0000001 3	ug/L		04/04/23 08:33	04/06/23 00:28	1
Total HpCDD	0.00000643	J,DX q	0.000050	0.0000002 1	ug/L		04/04/23 08:33	04/06/23 00:28	1
Total HpCDF	0.00000314	J,DX q	0.000050	0.0000001 2	ug/L		04/04/23 08:33	04/06/23 00:28	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*83*		*25 - 164*	*04/04/23 08:33*	*04/06/23 00:28*	*1*
13C-2,3,7,8-TCDF	*76*		*24 - 169*	*04/04/23 08:33*	*04/06/23 00:28*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-665359/1-A
Matrix: Water
Analysis Batch: 665779

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 665359

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDD	94		25 - 181	04/04/23 08:33	04/06/23 00:28	1
13C-1,2,3,7,8-PeCDF	82		24 - 185	04/04/23 08:33	04/06/23 00:28	1
13C-2,3,4,7,8-PeCDF	83		21 - 178	04/04/23 08:33	04/06/23 00:28	1
13C-1,2,3,4,7,8-HxCDD	82		32 - 141	04/04/23 08:33	04/06/23 00:28	1
13C-1,2,3,6,7,8-HxCDD	80		28 - 130	04/04/23 08:33	04/06/23 00:28	1
13C-1,2,3,4,7,8-HxCDF	75		26 - 152	04/04/23 08:33	04/06/23 00:28	1
13C-1,2,3,6,7,8-HxCDF	76		26 - 123	04/04/23 08:33	04/06/23 00:28	1
13C-1,2,3,7,8,9-HxCDF	81		29 - 147	04/04/23 08:33	04/06/23 00:28	1
13C-2,3,4,6,7,8-HxCDF	78		28 - 136	04/04/23 08:33	04/06/23 00:28	1
13C-1,2,3,4,6,7,8-HpCDD	90		23 - 140	04/04/23 08:33	04/06/23 00:28	1
13C-1,2,3,4,6,7,8-HpCDF	74		28 - 143	04/04/23 08:33	04/06/23 00:28	1
13C-1,2,3,4,7,8,9-HpCDF	83		26 - 138	04/04/23 08:33	04/06/23 00:28	1
13C-OCDD	89		17 - 157	04/04/23 08:33	04/06/23 00:28	1
13C-OCDF	83		17 - 157	04/04/23 08:33	04/06/23 00:28	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	93		35 - 197	04/04/23 08:33	04/06/23 00:28	1

Lab Sample ID: LCS 320-665359/2-A
Matrix: Water
Analysis Batch: 665779

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 665359

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000182		ug/L		91	67 - 158
2,3,7,8-TCDF	0.000200	0.000197		ug/L		99	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.000819		ug/L		82	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.000835		ug/L		84	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000833		ug/L		83	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.000849		ug/L		85	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000861		ug/L		86	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000857		ug/L		86	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.000892		ug/L		89	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000896		ug/L		90	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.000892		ug/L		89	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000897		ug/L		90	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.000816		ug/L		82	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.000868		ug/L		87	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000863		ug/L		86	78 - 138
OCDD	0.00200	0.00172		ug/L		86	78 - 144
OCDF	0.00200	0.00183		ug/L		91	63 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	82		20 - 175
13C-2,3,7,8-TCDF	77		22 - 152
13C-1,2,3,7,8-PeCDD	94		21 - 227
13C-1,2,3,7,8-PeCDF	80		21 - 192
13C-2,3,4,7,8-PeCDF	84		13 - 328

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-665359/2-A
Matrix: Water
Analysis Batch: 665779

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 665359

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCDD	81		21 - 193
13C-1,2,3,6,7,8-HxCDD	81		25 - 163
13C-1,2,3,4,7,8-HxCDF	75		19 - 202
13C-1,2,3,6,7,8-HxCDF	76		21 - 159
13C-1,2,3,7,8,9-HxCDF	81		17 - 205
13C-2,3,4,6,7,8-HxCDF	78		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	92		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	74		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	82		20 - 186
13C-OCDD	84		13 - 199
13C-OCDF	80		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	91		31 - 191

Lab Sample ID: LCSD 320-665359/3-A
Matrix: Water
Analysis Batch: 665779

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 665359

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000175		ug/L		87	67 - 158	4	50
2,3,7,8-TCDF			0.000200	0.000195		ug/L		98	75 - 158	1	50
1,2,3,7,8-PeCDD			0.00100	0.000797		ug/L		80	70 - 142	3	50
1,2,3,7,8-PeCDF			0.00100	0.000800		ug/L		80	80 - 134	4	50
2,3,4,7,8-PeCDF			0.00100	0.000796		ug/L		80	68 - 160	4	50
1,2,3,4,7,8-HxCDD			0.00100	0.000778		ug/L		78	70 - 164	9	50
1,2,3,6,7,8-HxCDD			0.00100	0.000824		ug/L		82	76 - 134	4	50
1,2,3,7,8,9-HxCDD			0.00100	0.000808		ug/L		81	64 - 162	6	50
1,2,3,4,7,8-HxCDF			0.00100	0.000848		ug/L		85	72 - 134	5	50
1,2,3,6,7,8-HxCDF			0.00100	0.000848		ug/L		85	84 - 130	6	50
1,2,3,7,8,9-HxCDF			0.00100	0.000832		ug/L		83	78 - 130	7	50
2,3,4,6,7,8-HxCDF			0.00100	0.000854		ug/L		85	70 - 156	5	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000755		ug/L		75	70 - 140	8	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.000827		ug/L		83	82 - 122	5	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000805		ug/L		80	78 - 138	7	50
OCDD			0.00200	0.00155		ug/L		78	78 - 144	11	50
OCDF			0.00200	0.00167		ug/L		84	63 - 170	9	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	78		20 - 175
13C-2,3,7,8-TCDF	72		22 - 152
13C-1,2,3,7,8-PeCDD	89		21 - 227
13C-1,2,3,7,8-PeCDF	77		21 - 192
13C-2,3,4,7,8-PeCDF	79		13 - 328
13C-1,2,3,4,7,8-HxCDD	76		21 - 193
13C-1,2,3,6,7,8-HxCDD	74		25 - 163
13C-1,2,3,4,7,8-HxCDF	70		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-665359/3-A
Matrix: Water
Analysis Batch: 665779

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 665359

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	69		21 - 159
13C-1,2,3,7,8,9-HxCDF	75		17 - 205
13C-2,3,4,6,7,8-HxCDF	72		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	88		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	70		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	79		20 - 186
13C-OCDD	86		13 - 199
13C-OCDF	80		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	92		31 - 191

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Comp

Specialty Organics

Prep Batch: 665359

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	1613B	
MB 320-665359/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-665359/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-665359/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 665779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	1613B	665359
MB 320-665359/1-A	Method Blank	Total/NA	Water	1613B	665359
LCS 320-665359/2-A	Lab Control Sample	Total/NA	Water	1613B	665359
LCSD 320-665359/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	665359

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Comp

Client Sample ID: Outfall011_20230316_Comp
Lab Sample ID: 570-131456-1
Date Collected: 03/16/23 07:15
Matrix: Water
Date Received: 03/16/23 17:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			1057.4 mL	20.0 uL	665359	04/04/23 08:33	CB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	665779	04/06/23 08:30	GRB	EET SAC
	Instrument ID: DFS 1									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-24
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-24
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	02-28-26
Utah	NELAP	CA000442021-12	02-28-23 *
Virginia	NELAP	460278	03-14-24
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Job ID: 570-131456-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131456-1	Outfall011_20230316_Comp	Water	03/16/23 07:15	03/16/23 17:45

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-131456 Chain of Custody

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp
Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 **ECI Project #57013187**	**Project Manager: Katherine Miller** 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Field Manager: Mark Dominick** 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

									ANALYSIS REQUIRED															
									R	R	R	R	R	R	R	R	R	R	R	C		
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl-, SO_4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	Turbidity, TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)	Total Recoverable Metals: (E200.8): Mn, Fe			Comments
Outfall 011	Outfall011_20230316_Comp	3/16/2023 0715	WM	500 mL Poly	1	HNO_3	90	Yes	X										X	X			Outfall 011 analyze for Mn and Fe.
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	1L Poly	1	None	115	No			X												
			WM	500 mL Poly	2	None	120	No				X											
			WM	500 mL Poly	2	None	130	No					X										48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X									48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X							
			WM	1 L Glass Amber	2	None	170	No									X						
			WM	1 L Glass Amber	2	None	180	No										X					
			WM	1L Poly	1	None	185	No							X								

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	3-16-2023/1205	H:A	[signature]	3/16/23 1205 EC
[signature]	3/16/23 1745	EC	[signature]	3/16/23 17:45 EC

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

3.4/3.4 2.2/2.2 SC11

2019-2020 Rainy Season
Version 4

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:	ANALYSIS REQUIRED
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp	R R R R R C
Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 **ECI Project #57013187**		
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)		Total Dissolved Metals: Mercury (E245.1)	Total Dissolved Metals: (E200.7): Mn, Fe						Comments
Outfall 011	Outfall011_20230316_Comp_F	3/16/2023 0715	WM	1L Poly	1	None	200	Yes	X					X						Filter and preserve w/in 24hrs of receipt at lab. Outfall 011 analyze for Mn and Fe
			WM	borosilicate vials	2	None	320	No					X							Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall011_20230316_Comp	3/16/2023 0715	WM	500 mL Poly	1	NaOH	220	No		X										
			WM	2.5 Gel Cube	1	None	225	No			X									Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No												

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	3-16-2023/1205	H:A	[signature]	3/16/23 1205 EC
[signature]	3/16/23 1745	EC	[signature]	3/16/23 17:45 BC
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

2019-2020 Rainy Season
Version 4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-211007.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-131456-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 4/3/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall - 011 Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall011_20230316_Comp (570-131456-1)	3/16/23	07:15 Pacific		Water			X	2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	03/17/23 7:0	EC	[signature]	3/18/23-910	EETSAC
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131456-2

Login Number: 131456
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131456-2

Login Number: 131456
List Number: 2
Creator: Guzman, Juan

List Source: Eurofins Sacramento
List Creation: 03/18/23 12:13 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall - 011 Comp

JOB NUMBER

570-131456-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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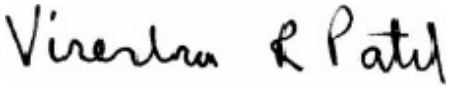
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131456-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131456-3

Comments
No additional comments.

Receipt
The samples were received on 3/16/2023 5:45 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.2º C and 3.4º C.

RAD
Method 900.0: Gross Alpha and Gross Beta batch 606931
The matrix spike (MS) recoveries for Gross Alpha were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.
(570-131459-Q-1-G MS)

Method 900.0: Gross Alpha and Gross Beta batch 606931
The detection goal was not met for the sample duplicate. However the purpose of the DUP is to demonstrate batch precision. The precision was within control limits demonstrating no adverse effect from the discrepancy.

(570-131459-Q-1-I DU)

Method 900.0: Gross Alpha and Gross Beta batch 606931
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall011_20230316_Comp (570-131456-1), (LCS 160-606931/2-A), (LCSB 160-606931/3-A), (MB 160-606931/1-A), (570-131459-Q-1-F), (570-131459-Q-1-I DU), (570-131459-Q-1-G MS) and (570-131459-Q-1-H MSBT)

Method 901.1: Gamma Prep Batch 160-604735
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Job ID: 570-131456-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Outfall011_20230316_Comp (570-131456-1), (570-129084-R-1-F) and (570-129084-R-1-H DU)

Method 903.0: Radium-226 batch 605061
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall011_20230316_Comp (570-131456-1), (LCS 160-605061/2-A), (MB 160-605061/1-A), (660-127969-B-7-A) and (660-127969-D-7-A DU)

Method 904.0: Radium-228 batch 605065
The detection goal was not met for the following sample(s). Sample was prepped at a reduced volume due to the presence of matrix interferences: Outfall011_20230316_Comp (570-131456-1). Analytical results are reported with the detection limit achieved.

Method 904.0: Radium-228 batch 605065
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall011_20230316_Comp (570-131456-1), (LCS 160-605065/2-A), (MB 160-605065/1-A), (660-127969-B-7-B) and (660-127969-D-7-B DU)

Method 904.0: Radium 228 batch 605065
The method blank (MB) has activity above the MDC and RL. The following associated samples are below the reporting limit for the contaminant therefore, re-analysis is not required. The data have been reported.

(MB 160-605065/1-A)

Method 905: Strontium-90 batch 605090
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall011_20230316_Comp (570-131456-1), (LCS 160-605090/2-A), (MB 160-605090/1-A), (380-41106-B-1-A) and (380-41106-C-1-A DU)

Method 906.0: Tritium 607088
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall011_20230316_Comp (570-131456-1), (LCS 160-607088/2-A), (MB 160-607088/1-A), (160-49538-A-1-A), (160-49538-A-1-C DU), (570-131459-R-1-B) and (570-131459-R-1-C MS)

Method A-01-R: Isotopic Uranium batch 605729
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall011_20230316_Comp (570-131456-1), (LCS 160-605729/2-A), (MB 160-605729/1-A), (570-131449-AX-1-B) and (570-131449-AX-1-C DU)

Method ExtChrom: Uranium Prep Batch 160-605729:
The following sample was prepared at a reduced aliquot due to discoloration: Outfall011_20230316_Comp (570-131456-1).

Job ID: 570-131456-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method LSC_Dist_Susp:

Method PrecSep_0:

Method PrecSep-21:

Method PrecSep-7: Strontium 90 Prep Batch 160-605090

The following sample was prepared at a reduced aliquot due to Matrix: Outfall011_20230316_Comp (570-131456-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Client Sample ID: Outfall011_20230316_Comp
Lab Sample ID: 570-131456-1

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: Outfall011_20230316_Comp
Lab Sample ID: 570-131456-1
Date Collected: 03/16/23 07:15
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	**3.16**		1.55	1.59	3.00	2.08	pCi/L	04/11/23 15:16	04/14/23 05:24	1
Gross Beta	**6.31**		1.01	1.19	4.00	0.977	pCi/L	04/11/23 15:16	04/14/23 05:24	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: Outfall011_20230316_Comp
Lab Sample ID: 570-131456-1
Date Collected: 03/16/23 07:15
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-1.17	U	15.1	15.1	20.0	19.5	pCi/L	03/22/23 16:26	03/30/23 10:45	1
Potassium-40	-53.8	U	159	159		237	pCi/L	03/22/23 16:26	03/30/23 10:45	1

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: Outfall011_20230316_Comp **Lab Sample ID: 570-131456-1**
Date Collected: 03/16/23 07:15 **Matrix: Water**
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**8.44**		1.08	1.32	1.00	0.599	pCi/L	03/27/23 09:46	04/19/23 15:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*47.2*		*30 - 110*	*03/27/23 09:46*	*04/19/23 15:08*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: Outfall011_20230316_Comp
Date Collected: 03/16/23 07:15
Date Received: 03/16/23 17:45

Lab Sample ID: 570-131456-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.588	U G	0.897	0.899	1.00	1.52	pCi/L	03/27/23 10:15	04/17/23 12:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*47.2*		*30 - 110*	*03/27/23 10:15*	*04/17/23 12:06*	*1*
Y Carrier	*83.4*		*30 - 110*	*03/27/23 10:15*	*04/17/23 12:06*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: Outfall011_20230316_Comp
Date Collected: 03/16/23 07:15
Date Received: 03/16/23 17:45

Lab Sample ID: 570-131456-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.0290	U	0.522	0.522	3.00	0.935	pCi/L	03/27/23 13:47	04/10/23 16:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*71.0*		*30 - 110*	*03/27/23 13:47*	*04/10/23 16:39*	*1*
Y Carrier	*68.0*		*30 - 110*	*03/27/23 13:47*	*04/10/23 16:39*	*1*

Client Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: Outfall011_20230316_Comp
Lab Sample ID: 570-131456-1
Date Collected: 03/16/23 07:15
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	114	U	156	156	500	263	pCi/L	04/12/23 10:37	04/13/23 06:40	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: Outfall011_20230316_Comp
Lab Sample ID: 570-131456-1
Date Collected: 03/16/23 07:15
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.347		0.291	0.292	1.00	0.326	pCi/L	03/30/23 16:34	04/03/23 20:59	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*89.5*		*30 - 110*	*03/30/23 16:34*	*04/03/23 20:59*	*1*

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-131456-1	Outfall011_20230316_Comp	47.2
LCS 160-605061/2-A	Lab Control Sample	96.6
MB 160-605061/1-A	Method Blank	95.6

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-131456-1	Outfall011_20230316_Comp	47.2	83.4
LCS 160-605065/2-A	Lab Control Sample	96.6	88.2
MB 160-605065/1-A	Method Blank	95.6	82.2

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-131456-1	Outfall011_20230316_Comp	71.0	68.0
LCS 160-605090/2-A	Lab Control Sample	83.8	75.9
MB 160-605090/1-A	Method Blank	83.0	70.3

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-131456-1	Outfall011_20230316_Comp	89.5
LCS 160-605729/2-A	Lab Control Sample	38.1
MB 160-605729/1-A	Method Blank	46.2

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-606931/1-A
Matrix: Water
Analysis Batch: 607421

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606931

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.01986	U	0.378	0.378	3.00	0.779	pCi/L	04/11/23 15:16	04/14/23 20:19	1
Gross Beta	1.580		0.602	0.622	4.00	0.817	pCi/L	04/11/23 15:16	04/14/23 20:19	1

Lab Sample ID: LCS 160-606931/2-A
Matrix: Water
Analysis Batch: 607345

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606931

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	58.50		8.40	3.00	1.90	pCi/L	116	75 - 125

Lab Sample ID: LCSB 160-606931/3-A
Matrix: Water
Analysis Batch: 607345

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606931

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.4	72.78		7.81	4.00	0.856	pCi/L	99	75 - 125

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-604735/1-A
Matrix: Water
Analysis Batch: 605378

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604735

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	5.575	U	11.5	11.5	20.0	14.5	pCi/L	03/22/23 16:26	03/29/23 21:25	1
Potassium-40	-139.9	U	180	180		285	pCi/L	03/22/23 16:26	03/29/23 21:25	1

Lab Sample ID: LCS 160-604735/2-A
Matrix: Water
Analysis Batch: 605376

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604735

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	135500		16100		443	pCi/L	100	75 - 125
Cesium-137	40800	42170		5030	20.0	105	pCi/L	103	75 - 125
Cobalt-60	17800	18660		2230		54.8	pCi/L	105	75 - 125

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-605061/1-A
Matrix: Water
Analysis Batch: 608037

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605061

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02180	U	0.101	0.101	1.00	0.194	pCi/L	03/27/23 09:46	04/19/23 15:04	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.6*		*30 - 110*	*03/27/23 09:46*	*04/19/23 15:04*	*1*

Lab Sample ID: LCS 160-605061/2-A
Matrix: Water
Analysis Batch: 608037

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605061

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.17		1.15	1.00	0.150	pCi/L	90	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*96.6*		*30 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-605065/1-A
Matrix: Water
Analysis Batch: 607842

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605065

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.386		0.518	0.563	1.00	0.485	pCi/L	03/27/23 10:15	04/17/23 12:02	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.6*		*30 - 110*	*03/27/23 10:15*	*04/17/23 12:02*	*1*
Y Carrier	*82.2*		*30 - 110*	*03/27/23 10:15*	*04/17/23 12:02*	*1*

Lab Sample ID: LCS 160-605065/2-A
Matrix: Water
Analysis Batch: 607842

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605065

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.03	9.949		1.30	1.00	0.429	pCi/L	124	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*96.6*		*30 - 110*
Y Carrier	*88.2*		*30 - 110*

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-605090/1-A
Matrix: Water
Analysis Batch: 606669

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605090

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.09802	U	0.194	0.194	3.00	0.333	pCi/L	03/27/23 13:47	04/10/23 16:12	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*83.0*		*30 - 110*	*03/27/23 13:47*	*04/10/23 16:12*	*1*
Y Carrier	*70.3*		*30 - 110*	*03/27/23 13:47*	*04/10/23 16:12*	*1*

Lab Sample ID: LCS 160-605090/2-A
Matrix: Water
Analysis Batch: 606671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605090

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Strontium-90	7.34	7.184		0.800	3.00	0.317	pCi/L	98	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*83.8*		*30 - 110*
Y Carrier	*75.9*		*30 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-607088/1-A
Matrix: Water
Analysis Batch: 607810

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 607088

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	18.47	U	132	132	500	235	pCi/L	04/12/23 10:37	04/13/23 04:24	1

Lab Sample ID: LCS 160-607088/2-A
Matrix: Water
Analysis Batch: 607810

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607088

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Tritium	2090	1964		338	500	239	pCi/L	94	75 - 125

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-605729/1-A
Matrix: Water
Analysis Batch: 605912

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605729

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.1686	U	0.206	0.207	1.00	0.300	pCi/L	03/30/23 16:34	04/03/23 20:56	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: MB 160-605729/1-A
Matrix: Water
Analysis Batch: 605912

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605729

Tracer	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Uranium-232	46.2		30 - 110	03/30/23 16:34	04/03/23 20:56	1

Lab Sample ID: LCS 160-605729/2-A
Matrix: Water
Analysis Batch: 605927

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605729

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	13.57		1.98	1.00	0.356	pCi/L	107	75 - 125		
Uranium-238			13.0	13.66		1.99	1.00	0.311	pCi/L	105	75 - 125		

Tracer	LCS %Yield	LCS Qualifier	Limits
Uranium-232	38.1		30 - 110

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Rad

Prep Batch: 604735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	Fill_Geo-0	
MB 160-604735/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-604735/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 605061

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	PrecSep-21	
MB 160-605061/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-605061/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 605065

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	PrecSep_0	
MB 160-605065/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-605065/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Prep Batch: 605090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	PrecSep-7	
MB 160-605090/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-605090/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	

Prep Batch: 605729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	ExtChrom	
MB 160-605729/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-605729/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 606931

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	Evaporation	
MB 160-606931/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-606931/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-606931/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Prep Batch: 607088

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131456-1	Outfall011_20230316_Comp	Total/NA	Water	LSC_Dist_Susp	
MB 160-607088/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-607088/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Comp

Client Sample ID: Outfall011_20230316_Comp
Lab Sample ID: 570-131456-1
Date Collected: 03/16/23 07:15
Matrix: Water
Date Received: 03/16/23 17:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Evaporation			200.01 mL	1.0 g	606931	04/11/23 15:16	MST	EET SL
Total/NA	Analysis	900.0		1			607424	04/14/23 05:24	SCB	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	604735	03/22/23 16:26	SEH	EET SL
Total/NA	Analysis	901.1		1			605597	03/30/23 10:45	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	PrecSep-21			750.11 mL	1.0 g	605061	03/27/23 09:46	DJP	EET SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	608038	04/19/23 15:08	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			750.11 mL	1.0 g	605065	03/27/23 10:15	DJP	EET SL
Total/NA	Analysis	904.0		1			607841	04/17/23 12:06	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep-7			499.33 mL	1.0 g	605090	03/27/23 13:47	DJP	EET SL
Total/NA	Analysis	905		1			606668	04/10/23 16:39	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	LSC_Dist_Susp			96.42 mL	1.0 g	607088	04/12/23 10:37	SEH	EET SL
Total/NA	Analysis	906.0		1			607810	04/13/23 06:40	REV	EET SL
	Instrument ID: LSCAQUA									
Total/NA	Prep	ExtChrom			204.4 mL	1.0 mL	605729	03/30/23 16:34	CMM	EET SL
Total/NA	Analysis	A-01-R		1			606006	04/03/23 20:59	FLC	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	06-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-23
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131456-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy
EPA = US Environmental Protection Agency
None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Job ID: 570-131456-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131456-1	Outfall011_20230316_Comp	Water	03/16/23 07:15	03/16/23 17:45

Loc: 570
131456

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-131456 Chain of Custody

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp
Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 **ECI Project #57013187**	**Project Manager: Katherine Miller** 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Field Manager: Mark Dominick** 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

									ANALYSIS REQUIRED															
									R	R	R	R	R	R	R	R	R	R	R	C		
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl-, SO_4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	Turbidity, TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)	Total Recoverable Metals: (E200.8): Mn, Fe			Comments
Outfall 011	Outfall011_20230316_Comp	3/16/2023 0715	WM	500 mL Poly	1	HNO_3	90	Yes	X										X	X			Outfall 011 analyze for Mn and Fe.
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	1L Poly	1	None	115	No			X												
			WM	500 mL Poly	2	None	120	No				X											
			WM	500 mL Poly	2	None	130	No					X										48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X									48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X							
			WM	1 L Glass Amber	2	None	170	No									X						
			WM	1 L Glass Amber	2	None	180	No										X					
			WM	1L Poly	1	None	185	No							X								

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
	3-16-2023/1205	H:A		3/16/23 1205 EC
Relinquished By	Date/Time:	Company:	Received By	Date/Time:
	3/16/23 1745	EC		3/16/23 17:45 EC
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

3.4/3.4 2.2/2.2 SC11

2019-2020 Rainy Season
Version 4

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:	ANALYSIS REQUIRED
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp	R R R R R C
Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 **ECI Project #57013187**		
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)		Total Dissolved Metals: Mercury (E245.1)	Total Dissolved Metals: (E200.7): Mn, Fe							Comments
Outfall 011	Outfall011_20230316_Comp_F	3/16/2023 0715	WM	1L Poly	1	None	200	Yes	X					X						Filter and preserve w/in 24hrs of receipt at lab. Outfall 011 analyze for Mn and Fe
			WM	borosilicate vials	2	None	320	No					X							Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall011_20230316_Comp	3/16/2023 0715	WM	500 mL Poly	1	NaOH	220	No		X										
			WM	2.5 Gal Cube	1	None	225	No			X									Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No												

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	3-16-2023/1205	H&A	[signature]	3/16/23 1205 EC
[signature]	3/16/23 1745	EC	[signature]	3/16/23 17:45 BC
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-211012.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131456-3
Address: 13715 Rider Trail North,	Due Date Requested: 4/18/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall - 011 Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	906.0/LSC_Dist_Susp Tritium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901.1_Cs/Fil_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall011_20230316_Comp (570-131456-1)	3/16/23	07:15 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation. Ok to Preserve

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		03/17/23 1:51	EC	FEDEX		
2	FEDEX			Oriana Shankey -	3/21/23 0930	ETASTL
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131456-3

Login Number: 131456
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131456-3

Login Number: 131456
List Number: 3
Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis
List Creation: 03/21/23 02:24 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall - 011 Grab

JOB NUMBER

570-131947-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

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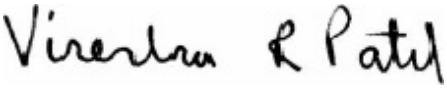
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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4/8/2023 8:37:41 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-131947-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Grab

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131947-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131947-1

Comments
No additional comments.

Receipt
The samples were received on 3/21/2023 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.1º C.

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-313610. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Methods 1664A, 1664B: The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-314083.
Method: 1664.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131947-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Grab

Client Sample ID: Outfall011_20230320_Grab
Lab Sample ID: 570-131947-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	380		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA

Client Sample ID: TB-20230320
Lab Sample ID: 570-131947-2

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: Outfall011_20230320_Grab **Lab Sample ID: 570-131947-1**
Date Collected: 03/20/23 14:10 **Matrix: Water**
Date Received: 03/21/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/22/23 04:03	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/22/23 04:03	1
Trichloroethene	ND		0.50	0.17	ug/L			03/22/23 04:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*60 - 140*		*03/22/23 04:03*	*1*
4-Bromofluorobenzene (Surr)	*102*		*60 - 140*		*03/22/23 04:03*	*1*
Dibromofluoromethane (Surr)	*84*		*60 - 140*		*03/22/23 04:03*	*1*
Toluene-d8 (Surr)	*100*		*60 - 140*		*03/22/23 04:03*	*1*

Client Sample ID: TB-20230320 **Lab Sample ID: 570-131947-2**
Date Collected: 03/20/23 14:10 **Matrix: Water**
Date Received: 03/21/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/22/23 03:41	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/22/23 03:41	1
Trichloroethene	ND		0.50	0.17	ug/L			03/22/23 03:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*60 - 140*		*03/22/23 03:41*	*1*
4-Bromofluorobenzene (Surr)	*99*		*60 - 140*		*03/22/23 03:41*	*1*
Dibromofluoromethane (Surr)	*90*		*60 - 140*		*03/22/23 03:41*	*1*
Toluene-d8 (Surr)	*100*		*60 - 140*		*03/22/23 03:41*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-131947-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Grab

General Chemistry

Client Sample ID: Outfall011_20230320_Grab
Lab Sample ID: 570-131947-1
Date Collected: 03/20/23 14:10
Matrix: Water
Date Received: 03/21/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	ND		0.98	0.50	mg/L		03/24/23 07:10	03/24/23 15:06	1
Specific Conductance (SM 2510B)	**380**		1.0	1.0	umhos/cm			03/22/23 20:23	1
Settleable Solids (SM 2540F)	ND		0.10	0.10	mL/L			03/21/23 22:05	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131947-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Grab

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-131947-1	Outfall011_20230320_Grab	97	102	84	100
570-131947-2	TB-20230320	99	99	90	100
LCS 570-313610/1003	Lab Control Sample	94	97	94	100
LCSD 570-313610/7	Lab Control Sample Dup	95	102	89	106
MB 570-313610/6	Method Blank	91	102	86	103

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-313610/6
Matrix: Water
Analysis Batch: 313610

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/21/23 21:54	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/21/23 21:54	1
Trichloroethene	ND		0.50	0.17	ug/L			03/21/23 21:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*60 - 140*		*03/21/23 21:54*	*1*
4-Bromofluorobenzene (Surr)	*102*		*60 - 140*		*03/21/23 21:54*	*1*
Dibromofluoromethane (Surr)	*86*		*60 - 140*		*03/21/23 21:54*	*1*
Toluene-d8 (Surr)	*103*		*60 - 140*		*03/21/23 21:54*	*1*

Lab Sample ID: LCS 570-313610/1003
Matrix: Water
Analysis Batch: 313610

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1-Dichloroethene			10.0	9.81		ug/L		98	50 - 150		
1,2-Dichloroethane			10.0	10.1		ug/L		101	70 - 130		
Trichloroethene			10.0	10.1		ug/L		101	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*60 - 140*
4-Bromofluorobenzene (Surr)	*97*		*60 - 140*
Dibromofluoromethane (Surr)	*94*		*60 - 140*
Toluene-d8 (Surr)	*100*		*60 - 140*

Lab Sample ID: LCSD 570-313610/7
Matrix: Water
Analysis Batch: 313610

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene			10.0	10.6		ug/L		106	50 - 150	7	32
1,2-Dichloroethane			10.0	11.4		ug/L		114	70 - 130	12	49
Trichloroethene			10.0	10.6		ug/L		106	65 - 135	5	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*60 - 140*
4-Bromofluorobenzene (Surr)	*102*		*60 - 140*
Dibromofluoromethane (Surr)	*89*		*60 - 140*
Toluene-d8 (Surr)	*106*		*60 - 140*

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-314083/1-A
Matrix: Water
Analysis Batch: 314571

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 314083

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		1.0	0.51	mg/L		03/24/23 07:10	03/24/23 15:06	1

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: LCS 570-314083/2-A
Matrix: Water
Analysis Batch: 314571

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 314083

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
HEM (Oil & Grease)			40.0	37.1		mg/L		93	78 - 114		

Lab Sample ID: LCSD 570-314083/3-A
Matrix: Water
Analysis Batch: 314571

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 314083

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM (Oil & Grease)			40.0	37.4		mg/L		94	78 - 114	1	18

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-313959/7
Matrix: Water
Analysis Batch: 313959

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/22/23 19:27	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131947-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Grab

GC/MS VOA

Analysis Batch: 313610

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131947-1	Outfall011_20230320_Grab	Total/NA	Water	624.1	
570-131947-2	TB-20230320	Total/NA	Water	624.1	
MB 570-313610/6	Method Blank	Total/NA	Water	624.1	
LCS 570-313610/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-313610/7	Lab Control Sample Dup	Total/NA	Water	624.1	

General Chemistry

Analysis Batch: 313462

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131947-1	Outfall011_20230320_Grab	Total/NA	Water	SM 2540F	

Analysis Batch: 313959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131947-1	Outfall011_20230320_Grab	Total/NA	Water	SM 2510B	
MB 570-313959/7	Method Blank	Total/NA	Water	SM 2510B	

Prep Batch: 314083

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131947-1	Outfall011_20230320_Grab	Total/NA	Water	1664A	
MB 570-314083/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-314083/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-314083/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 314571

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131947-1	Outfall011_20230320_Grab	Total/NA	Water	1664A	314083
MB 570-314083/1-A	Method Blank	Total/NA	Water	1664A	314083
LCS 570-314083/2-A	Lab Control Sample	Total/NA	Water	1664A	314083
LCSD 570-314083/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	314083

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-131947-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Grab

Client Sample ID: Outfall011_20230320_Grab
Lab Sample ID: 570-131947-1
Date Collected: 03/20/23 14:10
Matrix: Water
Date Received: 03/21/23 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	313610	03/22/23 04:03	A1W	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Prep	1664A			1025 mL	1000 mL	314083	03/24/23 07:10	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			314571	03/24/23 15:06	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									
Total/NA	Analysis	SM 2510B		1			313959	03/22/23 20:23	BDH9	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	313462	03/21/23 22:05	TXA8	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB-20230320
Lab Sample ID: 570-131947-2
Date Collected: 03/20/23 14:10
Matrix: Water
Date Received: 03/21/23 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	313610	03/22/23 03:41	A1W	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131947-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Grab

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131947-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Grab

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4

Protocol References:

1664A = EPA-821-98-002

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131947-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Grab

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131947-1	Outfall011_20230320_Grab	Water	03/20/23 14:10	03/21/23 17:10
570-131947-2	TB-20230320	Water	03/20/23 14:10	03/21/23 17:10

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 22, 2023 9:10 AM
To: Virendra Patel; Rapp, Kerry; Dallalah, Michelle
Subject: RE: <Response Requested> Eurofins Calscience sample confirmation files from 570-131947-1 Boeing NPDES SSFL - Routine Outfall - 011 Grab

EXTERNAL EMAIL*

Yes, please use 1410 for the time.

Katherine Miller
HALEY & ALDRICH
Tel: 520.289.8606

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Wednesday, March 22, 2023 7:51 AM
To: Miller, Katherine <KMiller@haleyaldrich.com>; Rapp, Kerry <KRapp@haleyaldrich.com>; Dallalah, Michelle <MDallalah@haleyaldrich.com>; Patel Virendra <Virendra.Patel@et.eurofinsus.com>
Subject: <Response Requested> Eurofins Calscience sample confirmation files from 570-131947-1 Boeing NPDES SSFL - Routine Outfall - 011 Grab

CAUTION: External Email

Hello,

Attached please find the sample confirmation files for job 570-131947-1; Boeing NPDES SSFL - Routine Outfall - 011 Grab

1. The COC is missing the TB collection time?

ACTION: Typically the collection time for the TB matches the samples submitted. Are we to use 1410pm for the TB sample?

Please feel free to contact me if you have any questions.

Thank you.

Virendra Patel
Project Manager

Eurofins Calscience
Phone: 714-895-5494

Mobile: 714-887-9901

E-mail: Virendra.Patel@et.eurofinsus.com
www.eurofinsus.com/env

Reference: [570-441055]
Attachments: 3

> > Bank information has changed, please refer to remittance information on invoice. < <

Loc: 570
131947

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-131947 Chain of Custody

Client Name/Address:	Project:	ANALYSIS REQUIRED	Field Readings	Meter serial #
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Grab	R R R R	Field Readings: (Include units) Time of Readings: 1410	
"Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 ECI Project # 57013187"			DO 7.94 mg/L pH 8.15 pH unit Temp 54.8 °C (F)	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)			
Sampler: michelle dallalah	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)		Field readings QC Checked by: MMD Date/Time: 3/20/23 1425	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Oil & Grease (E1664A-HEM)	VOCs - only 1,1-DCE, 1,2-DCA, TCE (E624)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Comments
Outfall 011	Outfall011_20230320_Grab	3/20/2023 1410	WM	1 L Glass Amber	2	HCl	15	No	X				
			WM	40 mL VOA	3	HCl	30	No		X			
			WM	1L Poly	1	None	70	No			X		
			WM	500 mL Poly	1	None	75	No				X	
Trip Blanks	TB-20230320	3/20/2023	WQ	40 mL VOA	3	HCl	30	No		X			

Legend: R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	3/21/2023 1300	H&A		3/21/23 1300 EC
	3/21/23 1710	EC	EC	3-21-23 17:10

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

1.1/1.1 SCII

2019-2020 Rainy Season
Version 4

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131947-1

Login Number: 131947
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/8/2023 8:49:12 AM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall - 011 Comp

JOB NUMBER

570-132136-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization

Virendra R Patil

Generated
4/8/2023 8:49:12 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Qualifiers

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132136-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132136-1

Comments
No additional comments.

Receipt
The samples were received on 3/22/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.6º C and 2.3º C.

GC/MS Semi VOA
Method 625.1 SIM: The laboratory control sample (LCS) for preparation batch 570-314349 and analytical batch 570-314965 recovered outside acceptance limits for 1,2,4-Trichlorobenzene and Hexachlorobenzene. There was insufficient sample to perform a re-extraction or re-analysis; therefore, the data have been reported.

Method 625.1 SIM: The continuing calibration verification (CCV) associated with batch 570-315862 recovered above the upper control limit for Benzidine. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: Outfall011_20230322_Comp (570-132136-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: Outfall011_20230322_Comp_F (570-132136-2), Outfall011_20230322_Comp_F (570-132136-2[MS]) and Outfall011_20230322_Comp_F (570-132136-2[MSD]). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: Outfall011_20230322_Comp_F (570-132136-2), Outfall011_20230322_Comp_F (570-132136-2[MS]) and Outfall011_20230322_Comp_F (570-132136-2[MSD]). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method 200.8: The method blank for preparation batch 570-314038 and analytical batch 570-314166 contained Iron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 2540D: The sample duplicate (DUP) precision for analytical batch 570-314596 was outside control limits. Sample non-homogeneity is suspected.

Method SM 5210B: The following sample were diluted due to the nature of the sample matrix: Outfall011_20230322_Comp (570-132136-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Job ID: 570-132136-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

Organic Prep

Method 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-314171. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Method 608.3 PEST/PCB LL

Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-314349. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Method 625.1 Sim

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Client Sample ID: Outfall011_20230322_Comp
Lab Sample ID: 570-132136-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	11		1.0	0.36	mg/L	1		300.0	Total/NA
Nitrate as N	0.14		0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate	69		1.0	0.24	mg/L	1		300.0	Total/NA
Nitrate Nitrite as N	0.14		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Copper	2.0		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	8.5	J,DX MB	20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	7.2		1.0	0.41	ug/L	1		200.8	Total Recoverable
Zinc	2.9	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Ammonia	0.034	J,DX	0.075	0.032	mg/L	1		350.1	Total/NA
Turbidity	0.25		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Dissolved Solids	210		10	8.7	mg/L	1		SM 2540C	Total/NA
MBAS	0.063	J,DX	0.20	0.050	mg/L	1		SM 5540C	Total/NA

Client Sample ID: Outfall011_20230322_Comp_F
Lab Sample ID: 570-132136-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.33	J,DX BU	1.0	0.13	ug/L	1		200.8	Dissolved
Copper	1.8	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	7.9	J,DX BU	20	3.7	ug/L	1		200.8	Dissolved
Lead	0.26	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Manganese	6.8	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Selenium	0.67	J,DX BU	2.0	0.52	ug/L	1		200.8	Dissolved
Zinc	2.9	J,DX BU	20	2.8	ug/L	1		200.8	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: Outfall011_20230322_Comp
Lab Sample ID: 570-132136-1
Date Collected: 03/21/23 14:20
Matrix: Water
Date Received: 03/22/23 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		0.95	0.13	ug/L		03/24/23 05:15	03/31/23 00:44	1
2,4-Dinitrotoluene	ND		0.19	0.11	ug/L		03/24/23 05:15	03/31/23 00:44	1
Bis(2-ethylhexyl) phthalate	ND		4.8	3.4	ug/L		03/24/23 05:15	03/31/23 00:44	1
N-Nitrosodimethylamine	ND		0.19	0.18	ug/L		03/24/23 05:15	03/31/23 00:44	1
Pentachlorophenol	ND		0.95	0.80	ug/L		03/24/23 05:15	03/31/23 00:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*46*		*31 - 120*	*03/24/23 05:15*	*03/31/23 00:44*	*1*
Phenol-d6 (Surr)	*21*		*10 - 120*	*03/24/23 05:15*	*03/31/23 00:44*	*1*
p-Terphenyl-d14 (Surr)	*73*		*45 - 120*	*03/24/23 05:15*	*03/31/23 00:44*	*1*
2,4,6-Tribromophenol	*83*		*28 - 127*	*03/24/23 05:15*	*03/31/23 00:44*	*1*
2-Fluorophenol	*29*		*17 - 120*	*03/24/23 05:15*	*03/31/23 00:44*	*1*
Nitrobenzene-d5	*53*		*27 - 120*	*03/24/23 05:15*	*03/31/23 00:44*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 608.3 - Organochlorine Pesticides in Water

Client Sample ID: Outfall011_20230322_Comp
Lab Sample ID: 570-132136-1
Date Collected: 03/21/23 14:20
Matrix: Water
Date Received: 03/22/23 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		03/23/23 12:38	03/26/23 14:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*51*		*20 - 139*	*03/23/23 12:38*	*03/26/23 14:29*	*1*
DCB Decachlorobiphenyl (Surr)	*44*		*20 - 154*	*03/23/23 12:38*	*03/26/23 14:29*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: Outfall011_20230322_Comp
Lab Sample ID: 570-132136-1
Date Collected: 03/21/23 14:20
Matrix: Water
Date Received: 03/22/23 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**11**		1.0	0.36	mg/L			03/23/23 02:07	1
Nitrite as N	ND		0.10	0.043	mg/L			03/23/23 02:07	1
Nitrate as N	**0.14**		0.10	0.020	mg/L			03/23/23 02:07	1
Sulfate	**69**		1.0	0.24	mg/L			03/23/23 02:07	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: Outfall011_20230322_Comp
Lab Sample ID: 570-132136-1
Date Collected: 03/21/23 14:20
Matrix: Water
Date Received: 03/22/23 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/23/23 20:09	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: Outfall011_20230322_Comp
Lab Sample ID: 570-132136-1
Date Collected: 03/21/23 14:20
Matrix: Water
Date Received: 03/22/23 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	0.14		0.10	0.020	mg/L			03/24/23 10:42	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: Outfall011_20230322_Comp
Lab Sample ID: 570-132136-1
Date Collected: 03/21/23 14:20
Matrix: Water
Date Received: 03/22/23 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		03/23/23 07:42	03/23/23 11:26	1
Copper	**2.0**		2.0	0.32	ug/L		03/23/23 07:42	03/23/23 11:26	1
Iron	**8.5**	**J,DX MB**	20	3.7	ug/L		03/23/23 07:42	03/23/23 11:26	1
Lead	ND		1.0	0.12	ug/L		03/23/23 07:42	03/23/23 11:26	1
Manganese	**7.2**		1.0	0.41	ug/L		03/23/23 07:42	03/23/23 11:26	1
Selenium	ND		2.0	0.52	ug/L		03/23/23 07:42	03/23/23 11:26	1
Zinc	**2.9**	**J,DX**	20	2.8	ug/L		03/23/23 07:42	03/23/23 11:26	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: Outfall011_20230322_Comp_F
Lab Sample ID: 570-132136-2
Date Collected: 03/21/23 14:20
Matrix: Water
Date Received: 03/22/23 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.33	J,DX BU	1.0	0.13	ug/L			03/23/23 12:34	1
Copper	1.8	J,DX BU	2.0	0.32	ug/L			03/23/23 12:34	1
Iron	7.9	J,DX BU	20	3.7	ug/L			03/23/23 12:34	1
Lead	0.26	J,DX BU	1.0	0.12	ug/L			03/23/23 12:34	1
Manganese	6.8	BU	1.0	0.41	ug/L			03/23/23 12:34	1
Selenium	0.67	J,DX BU	2.0	0.52	ug/L			03/23/23 12:34	1
Zinc	2.9	J,DX BU	20	2.8	ug/L			03/23/23 12:34	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: Outfall011_20230322_Comp
Lab Sample ID: 570-132136-1
Date Collected: 03/21/23 14:20
Matrix: Water
Date Received: 03/22/23 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/23/23 08:50	03/23/23 18:18	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: Outfall011_20230322_Comp_F
Lab Sample ID: 570-132136-2
Date Collected: 03/21/23 14:20
Matrix: Water
Date Received: 03/22/23 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	BU	0.20	0.12	ug/L		03/23/23 06:08	03/23/23 19:04	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

General Chemistry

Client Sample ID: Outfall011_20230322_Comp
Date Collected: 03/21/23 14:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132136-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	**0.034**	**J,DX**	0.075	0.032	mg/L		04/03/23 10:18	04/03/23 12:15	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			03/27/23 13:54	1
Turbidity (SM 2130B)	**0.25**		0.05	0.05	NTU			03/22/23 18:38	1
Total Dissolved Solids (SM 2540C)	**210**		10	8.7	mg/L			03/27/23 18:34	1
Total Suspended Solids (SM 2540D)	ND		1.0	0.83	mg/L			03/24/23 16:00	1
Biochemical Oxygen Demand (SM 5210B)	ND		2.0	1.0	mg/L		03/23/23 11:21	03/23/23 11:51	1
MBAS (SM 5540C)	**0.063**	**J,DX**	0.20	0.050	mg/L		03/22/23 20:00	03/22/23 20:57	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Job ID: 570-132136-1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	PHL6	TPHd14	TBP	2FP	NBZ
Lab Sample ID	Client Sample ID	(31-120)	(10-120)	(45-120)	(28-127)	(17-120)	(27-120)
570-132136-1	Outfall011_20230322_Comp	46	21	73	83	29	53
LCS 570-314349/2-A	Lab Control Sample	71	37	99	95	47	67
LCSD 570-314349/3-A	Lab Control Sample Dup	69	35	101	90	47	66
MB 570-314349/1-A	Method Blank	46	25	81	66	35	57

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX1	DCB1
Lab Sample ID	Client Sample ID	(20-139)	(20-154)
570-132136-1	Outfall011_20230322_Comp	51	44
LCS 570-314171/2-A	Lab Control Sample	54	57
LCSD 570-314171/3-A	Lab Control Sample Dup	57	68

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl (Surr)

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX2	DCB1
Lab Sample ID	Client Sample ID	(20-139)	(20-154)
MB 570-314171/1-A	Method Blank	88	101

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-314349/1-A
Matrix: Water
Analysis Batch: 314965

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 314349

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		03/24/23 05:15	03/27/23 14:38	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		03/24/23 05:15	03/27/23 14:38	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		03/24/23 05:15	03/27/23 14:38	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		03/24/23 05:15	03/27/23 14:38	1
Pentachlorophenol	ND		1.0	0.84	ug/L		03/24/23 05:15	03/27/23 14:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*46*		*31 - 120*	*03/24/23 05:15*	*03/27/23 14:38*	*1*
Phenol-d6 (Surr)	*25*		*10 - 120*	*03/24/23 05:15*	*03/27/23 14:38*	*1*
p-Terphenyl-d14 (Surr)	*81*		*45 - 120*	*03/24/23 05:15*	*03/27/23 14:38*	*1*
2,4,6-Tribromophenol	*66*		*28 - 127*	*03/24/23 05:15*	*03/27/23 14:38*	*1*
2-Fluorophenol	*35*		*17 - 120*	*03/24/23 05:15*	*03/27/23 14:38*	*1*
Nitrobenzene-d5	*57*		*27 - 120*	*03/24/23 05:15*	*03/27/23 14:38*	*1*

Lab Sample ID: LCS 570-314349/2-A
Matrix: Water
Analysis Batch: 314965

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 314349

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4,6-Trichlorophenol	20.0	17.1		ug/L		85	52 - 129
2,4-Dinitrotoluene	20.0	22.6		ug/L		113	48 - 127
Bis(2-ethylhexyl) phthalate	20.0	24.4		ug/L		122	29 - 137
N-Nitrosodimethylamine	20.0	9.98		ug/L		50	20 - 120
Pentachlorophenol	20.0	10.3		ug/L		51	38 - 152

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*71*		*31 - 120*
Phenol-d6 (Surr)	*37*		*10 - 120*
p-Terphenyl-d14 (Surr)	*99*		*45 - 120*
2,4,6-Tribromophenol	*95*		*28 - 127*
2-Fluorophenol	*47*		*17 - 120*
Nitrobenzene-d5	*67*		*27 - 120*

Lab Sample ID: LCSD 570-314349/3-A
Matrix: Water
Analysis Batch: 314965

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 314349

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4,6-Trichlorophenol	20.0	16.9		ug/L		84	52 - 129	1	35
2,4-Dinitrotoluene	20.0	21.2		ug/L		106	48 - 127	6	25
Bis(2-ethylhexyl) phthalate	20.0	23.0		ug/L		115	29 - 137	6	50
N-Nitrosodimethylamine	20.0	11.5		ug/L		57	20 - 120	14	21
Pentachlorophenol	20.0	9.33		ug/L		47	38 - 152	10	52

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*69*		*31 - 120*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-314349/3-A
Matrix: Water
Analysis Batch: 314965

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 314349

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Phenol-d6 (Surr)	*35*		*10 - 120*
p-Terphenyl-d14 (Surr)	*101*		*45 - 120*
2,4,6-Tribromophenol	*90*		*28 - 127*
2-Fluorophenol	*47*		*17 - 120*
Nitrobenzene-d5	*66*		*27 - 120*

Method: 608.3 - Organochlorine Pesticides in Water

Lab Sample ID: MB 570-314171/1-A
Matrix: Water
Analysis Batch: 314768

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 314171

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		03/23/23 12:38	03/26/23 01:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*88*		*20 - 139*	*03/23/23 12:38*	*03/26/23 01:29*	*1*
DCB Decachlorobiphenyl (Surr)	*101*		*20 - 154*	*03/23/23 12:38*	*03/26/23 01:29*	*1*

Lab Sample ID: LCS 570-314171/2-A
Matrix: Water
Analysis Batch: 314256

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 314171

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
alpha-BHC			0.0333	0.0196		ug/L		59	37 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*54*		*20 - 139*
DCB Decachlorobiphenyl (Surr)	*57*		*20 - 154*

Lab Sample ID: LCSD 570-314171/3-A
Matrix: Water
Analysis Batch: 314256

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 314171

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
alpha-BHC			0.0333	0.0210		ug/L		63	37 - 140	7	36

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*57*		*20 - 139*
DCB Decachlorobiphenyl (Surr)	*68*		*20 - 154*

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-313921/5
Matrix: Water
Analysis Batch: 313921

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			03/22/23 20:45	1
Nitrate as N	ND		0.10	0.020	mg/L			03/22/23 20:45	1

Lab Sample ID: LCS 570-313921/6
Matrix: Water
Analysis Batch: 313921

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.50		mg/L		100	90 - 110
Nitrate as N	5.00	4.93		mg/L		99	90 - 110

Lab Sample ID: LCSD 570-313921/7
Matrix: Water
Analysis Batch: 313921

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.50		mg/L		100	90 - 110	0	15
Nitrate as N	5.00	4.93		mg/L		99	90 - 110	0	15

Lab Sample ID: MB 570-313922/5
Matrix: Water
Analysis Batch: 313922

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			03/22/23 20:45	1
Sulfate	ND		1.0	0.24	mg/L			03/22/23 20:45	1

Lab Sample ID: LCS 570-313922/6
Matrix: Water
Analysis Batch: 313922

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	48.5		mg/L		97	90 - 110
Sulfate	50.0	48.6		mg/L		97	90 - 110

Lab Sample ID: LCSD 570-313922/7
Matrix: Water
Analysis Batch: 313922

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	48.5		mg/L		97	90 - 110	0	15
Sulfate	50.0	48.6		mg/L		97	90 - 110	0	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-314154/7
Matrix: Water
Analysis Batch: 314154

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/23/23 12:31	1

Lab Sample ID: LCS 570-314154/8
Matrix: Water
Analysis Batch: 314154

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	24.3		ug/L		97	85 - 115

Lab Sample ID: LCSD 570-314154/9
Matrix: Water
Analysis Batch: 314154

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	24.4		ug/L		98	85 - 115	0	15

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-314038/1-A
Matrix: Water
Analysis Batch: 314166

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 314038

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		03/23/23 07:42	03/23/23 11:20	1
Copper	ND		2.0	0.32	ug/L		03/23/23 07:42	03/23/23 11:20	1
Iron	3.83	J,DX	20	3.7	ug/L		03/23/23 07:42	03/23/23 11:20	1
Lead	ND		1.0	0.12	ug/L		03/23/23 07:42	03/23/23 11:20	1
Manganese	ND		1.0	0.41	ug/L		03/23/23 07:42	03/23/23 11:20	1
Selenium	ND		2.0	0.52	ug/L		03/23/23 07:42	03/23/23 11:20	1
Zinc	ND		20	2.8	ug/L		03/23/23 07:42	03/23/23 11:20	1

Lab Sample ID: LCS 570-314038/2-A
Matrix: Water
Analysis Batch: 314166

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 314038

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	79.6		ug/L		99	85 - 115
Copper	80.0	78.9		ug/L		99	85 - 115
Iron	800	806		ug/L		101	85 - 115
Lead	80.0	81.5		ug/L		102	85 - 115
Manganese	80.0	79.0		ug/L		99	85 - 115
Selenium	80.0	78.4		ug/L		98	85 - 115
Zinc	80.0	77.6		ug/L		97	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-314038/3-A
Matrix: Water
Analysis Batch: 314166

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 314038

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium			80.0	80.2		ug/L		100	85 - 115	1	20
Copper			80.0	78.5		ug/L		98	85 - 115	1	20
Iron			800	804		ug/L		101	85 - 115	0	20
Lead			80.0	81.5		ug/L		102	85 - 115	0	20
Manganese			80.0	79.3		ug/L		99	85 - 115	0	20
Selenium			80.0	77.7		ug/L		97	85 - 115	1	20
Zinc			80.0	78.8		ug/L		98	85 - 115	2	20

Lab Sample ID: 570-132136-1 MS
Matrix: Water
Analysis Batch: 314166

Client Sample ID: Outfall011_20230322_Comp
Prep Type: Total Recoverable
Prep Batch: 314038

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND		80.0	78.6		ug/L		98	80 - 120
Copper	2.0		80.0	83.0		ug/L		101	80 - 120
Iron	8.5	J,DX MB	800	814		ug/L		101	80 - 120
Lead	ND		80.0	80.0		ug/L		100	80 - 120
Manganese	7.2		80.0	86.3		ug/L		99	80 - 120
Selenium	ND		80.0	74.7		ug/L		93	80 - 120
Zinc	2.9	J,DX	80.0	78.0		ug/L		94	80 - 120

Lab Sample ID: 570-132136-1 MSD
Matrix: Water
Analysis Batch: 314166

Client Sample ID: Outfall011_20230322_Comp
Prep Type: Total Recoverable
Prep Batch: 314038

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND		80.0	78.6		ug/L		98	80 - 120	0	20
Copper	2.0		80.0	80.4		ug/L		98	80 - 120	3	20
Iron	8.5	J,DX MB	800	805		ug/L		100	80 - 120	1	20
Lead	ND		80.0	80.4		ug/L		100	80 - 120	0	20
Manganese	7.2		80.0	86.0		ug/L		98	80 - 120	0	20
Selenium	ND		80.0	76.6		ug/L		96	80 - 120	2	20
Zinc	2.9	J,DX	80.0	78.2		ug/L		94	80 - 120	0	20

Lab Sample ID: MB 570-314134/1-A
Matrix: Water
Analysis Batch: 314184

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L			03/23/23 12:26	1
Copper	ND		2.0	0.32	ug/L			03/23/23 12:26	1
Iron	ND		20	3.7	ug/L			03/23/23 12:26	1
Lead	ND		1.0	0.12	ug/L			03/23/23 12:26	1
Manganese	ND		1.0	0.41	ug/L			03/23/23 12:26	1
Selenium	ND		2.0	0.52	ug/L			03/23/23 12:26	1
Zinc	ND		20	2.8	ug/L			03/23/23 12:26	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-314134/2-A
Matrix: Water
Analysis Batch: 314184

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	78.1		ug/L		98	85 - 115
Copper	80.0	76.3		ug/L		95	85 - 115
Iron	800	811		ug/L		101	85 - 115
Lead	80.0	72.9		ug/L		91	85 - 115
Manganese	80.0	80.1		ug/L		100	85 - 115
Selenium	80.0	76.5		ug/L		96	85 - 115
Zinc	80.0	77.5		ug/L		97	85 - 115

Lab Sample ID: LCSD 570-314134/3-A
Matrix: Water
Analysis Batch: 314184

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	78.8		ug/L		99	85 - 115	1	20
Copper	80.0	77.9		ug/L		97	85 - 115	2	20
Iron	800	818		ug/L		102	85 - 115	1	20
Lead	80.0	76.3		ug/L		95	85 - 115	4	20
Manganese	80.0	79.9		ug/L		100	85 - 115	0	20
Selenium	80.0	80.1		ug/L		100	85 - 115	5	20
Zinc	80.0	78.1		ug/L		98	85 - 115	1	20

Lab Sample ID: 570-132136-2 MS
Matrix: Water
Analysis Batch: 314184

Client Sample ID: Outfall011_20230322_Comp_F
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	0.33	J,DX BU	80.0	71.7	BU	ug/L		89	80 - 120
Copper	1.8	J,DX BU	80.0	73.6	BU	ug/L		90	80 - 120
Iron	7.9	J,DX BU	800	748	BU	ug/L		92	80 - 120
Lead	0.26	J,DX BU	80.0	70.0	BU	ug/L		87	80 - 120
Manganese	6.8	BU	80.0	81.1	BU	ug/L		93	80 - 120
Selenium	0.67	J,DX BU	80.0	72.1	BU	ug/L		89	80 - 120
Zinc	2.9	J,DX BU	80.0	71.9	BU	ug/L		86	80 - 120

Lab Sample ID: 570-132136-2 MSD
Matrix: Water
Analysis Batch: 314184

Client Sample ID: Outfall011_20230322_Comp_F
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	0.33	J,DX BU	80.0	70.2	BU	ug/L		87	80 - 120	2	20
Copper	1.8	J,DX BU	80.0	72.6	BU	ug/L		88	80 - 120	1	20
Iron	7.9	J,DX BU	800	738	BU	ug/L		91	80 - 120	1	20
Lead	0.26	J,DX BU	80.0	69.0	BU	ug/L		86	80 - 120	2	20
Manganese	6.8	BU	80.0	81.1	BU	ug/L		93	80 - 120	0	20
Selenium	0.67	J,DX BU	80.0	72.8	BU	ug/L		90	80 - 120	1	20
Zinc	2.9	J,DX BU	80.0	72.0	BU	ug/L		86	80 - 120	0	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-314071/1-A
Matrix: Water
Analysis Batch: 314463
Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 314071

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/23/23 08:50	03/23/23 17:57	1

Lab Sample ID: LCS 570-314071/2-A
Matrix: Water
Analysis Batch: 314463
Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 314071

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	8.08		ug/L		101	85 - 115

Lab Sample ID: LCSD 570-314071/3-A
Matrix: Water
Analysis Batch: 314463
Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 314071

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	8.00	7.71		ug/L		96	85 - 115	5	10

Lab Sample ID: 570-132136-1 MS
Matrix: Water
Analysis Batch: 314463
Client Sample ID: Outfall011_20230322_Comp
Prep Type: Total/NA
Prep Batch: 314071

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		8.00	7.84		ug/L		98	85 - 115

Lab Sample ID: 570-132136-1 MSD
Matrix: Water
Analysis Batch: 314463
Client Sample ID: Outfall011_20230322_Comp
Prep Type: Total/NA
Prep Batch: 314071

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		8.00	7.96		ug/L		100	85 - 115	2	10

Lab Sample ID: MB 570-314019/1-B
Matrix: Water
Analysis Batch: 314463
Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 314025

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/23/23 06:08	03/23/23 18:27	1

Lab Sample ID: LCS 570-314019/2-B
Matrix: Water
Analysis Batch: 314463
Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 314025

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	7.63		ug/L		95	85 - 115

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: LCSD 570-314019/3-B
Matrix: Water
Analysis Batch: 314463

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 314025

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			8.00	7.59		ug/L		95	85 - 115	0	10

Lab Sample ID: 570-132136-2 MS
Matrix: Water
Analysis Batch: 314463

Client Sample ID: Outfall011_20230322_Comp_F
Prep Type: Dissolved
Prep Batch: 314025

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	ND	BU	8.00	7.53	BU	ug/L		94	85 - 115		

Lab Sample ID: 570-132136-2 MSD
Matrix: Water
Analysis Batch: 314463

Client Sample ID: Outfall011_20230322_Comp_F
Prep Type: Dissolved
Prep Batch: 314025

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND	BU	8.00	7.54	BU	ug/L		94	85 - 115	0	10

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-316971/5-B
Matrix: Water
Analysis Batch: 317033

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 316971

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		04/03/23 10:18	04/03/23 12:09	1

Lab Sample ID: LCS 570-316971/6-B
Matrix: Water
Analysis Batch: 317033

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 316971

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Ammonia			0.500	0.492		mg/L		98	90 - 110		

Lab Sample ID: LCSD 570-316971/7-B
Matrix: Water
Analysis Batch: 317033

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 316971

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia			0.500	0.481		mg/L		96	90 - 110	2	20

Lab Sample ID: 570-132136-1 MS
Matrix: Water
Analysis Batch: 317033

Client Sample ID: Outfall011_20230322_Comp
Prep Type: Total/NA
Prep Batch: 316971

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Ammonia	0.034	J,DX	0.500	0.508		mg/L		95	90 - 110		

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: 570-132136-1 MSD — **Client Sample ID: Outfall011_20230322_Comp**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 317033 — **Prep Batch: 316971**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	0.034	J,DX	0.500	0.518		mg/L		97	90 - 110	2	25

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-309190/11 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 309190

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			03/27/23 12:56	1

Lab Sample ID: LCS 570-309190/12 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 309190

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	259		ug/L		104	90 - 110

Lab Sample ID: LCSD 570-309190/13 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 309190

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	250	271		ug/L		109	90 - 110	5	20

Lab Sample ID: MRL 570-309190/10 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 309190

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	5.38		ug/L		108	50 - 150

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-313839/1 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 313839

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	1000	1000		NTU		100.6	99.0 - 101.0

Lab Sample ID: LCSSRM 570-313839/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 313839

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	10.0	10		NTU		101.0	99.0 - 101.0

Method: SM 2130B - Turbidity (Continued)

Lab Sample ID: LCSSRM 570-313839/3
Matrix: Water
Analysis Batch: 313839

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-315156/1
Matrix: Water
Analysis Batch: 315156

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			03/27/23 18:34	1

Lab Sample ID: LCS 570-315156/2
Matrix: Water
Analysis Batch: 315156

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	1020		mg/L		102	84 - 108

Lab Sample ID: LCSD 570-315156/3
Matrix: Water
Analysis Batch: 315156

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1060		mg/L		106	84 - 108	4	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-314596/1
Matrix: Water
Analysis Batch: 314596

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			03/24/23 15:59	1

Lab Sample ID: LCS 570-314596/2
Matrix: Water
Analysis Batch: 314596

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	94.0		mg/L		94	77 - 116

Lab Sample ID: LCSD 570-314596/3
Matrix: Water
Analysis Batch: 314596

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	96.0		mg/L		96	77 - 116	2	10

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 570-314145/1-A
Matrix: Water
Analysis Batch: 315483

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 314145

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L		03/23/23 11:21	03/23/23 11:26	1

Lab Sample ID: LCS 570-314145/2-A
Matrix: Water
Analysis Batch: 315483

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 314145

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	199	208		mg/L		105	84.6 - 115.4

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-313848/5-A
Matrix: Water
Analysis Batch: 314090

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 313848

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.20	0.050	mg/L		03/22/23 15:00	03/22/23 17:28	1

Lab Sample ID: LCS 570-313848/6-A
Matrix: Water
Analysis Batch: 314090

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 313848

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
MBAS	0.500	0.522		mg/L		104	83 - 122

Lab Sample ID: LCSD 570-313848/7-A
Matrix: Water
Analysis Batch: 314090

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 313848

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS	0.500	0.524		mg/L		105	83 - 122	0	10

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

GC/MS Semi VOA

Prep Batch: 314349

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	625	
MB 570-314349/1-A	Method Blank	Total/NA	Water	625	
LCS 570-314349/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-314349/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 314965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-314349/1-A	Method Blank	Total/NA	Water	625.1 SIM	314349
LCS 570-314349/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	314349
LCSD 570-314349/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	314349

Analysis Batch: 315862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	625.1 SIM	314349

GC Semi VOA

Prep Batch: 314171

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	608	
MB 570-314171/1-A	Method Blank	Total/NA	Water	608	
LCS 570-314171/2-A	Lab Control Sample	Total/NA	Water	608	
LCSD 570-314171/3-A	Lab Control Sample Dup	Total/NA	Water	608	

Analysis Batch: 314256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-314171/2-A	Lab Control Sample	Total/NA	Water	608.3	314171
LCSD 570-314171/3-A	Lab Control Sample Dup	Total/NA	Water	608.3	314171

Analysis Batch: 314768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	608.3	314171
MB 570-314171/1-A	Method Blank	Total/NA	Water	608.3	314171

HPLC/IC

Analysis Batch: 313921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	300.0	
MB 570-313921/5	Method Blank	Total/NA	Water	300.0	
LCS 570-313921/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-313921/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 313922

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	300.0	
MB 570-313922/5	Method Blank	Total/NA	Water	300.0	
LCS 570-313922/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-313922/7	Lab Control Sample Dup	Total/NA	Water	300.0	

HPLC/IC

Analysis Batch: 314154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	314.0	
MB 570-314154/7	Method Blank	Total/NA	Water	314.0	
LCS 570-314154/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-314154/9	Lab Control Sample Dup	Total/NA	Water	314.0	

Analysis Batch: 314475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	NO2NO3 Calc	

Metals

Filtration Batch: 314019

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-2	Outfall011_20230322_Comp_F	Dissolved	Water	Filtration	
MB 570-314019/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-314019/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-314019/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-132136-2 MS	Outfall011_20230322_Comp_F	Dissolved	Water	Filtration	
570-132136-2 MSD	Outfall011_20230322_Comp_F	Dissolved	Water	Filtration	

Prep Batch: 314025

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-2	Outfall011_20230322_Comp_F	Dissolved	Water	245.1	314019
MB 570-314019/1-B	Method Blank	Dissolved	Water	245.1	314019
LCS 570-314019/2-B	Lab Control Sample	Dissolved	Water	245.1	314019
LCSD 570-314019/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	314019
570-132136-2 MS	Outfall011_20230322_Comp_F	Dissolved	Water	245.1	314019
570-132136-2 MSD	Outfall011_20230322_Comp_F	Dissolved	Water	245.1	314019

Prep Batch: 314038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total Recoverable	Water	200.8	
MB 570-314038/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-314038/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-314038/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-132136-1 MS	Outfall011_20230322_Comp	Total Recoverable	Water	200.8	
570-132136-1 MSD	Outfall011_20230322_Comp	Total Recoverable	Water	200.8	

Prep Batch: 314071

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	245.1	
MB 570-314071/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-314071/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-314071/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
570-132136-1 MS	Outfall011_20230322_Comp	Total/NA	Water	245.1	
570-132136-1 MSD	Outfall011_20230322_Comp	Total/NA	Water	245.1	

Filtration Batch: 314134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-2	Outfall011_20230322_Comp_F	Dissolved	Water	Filtration	

Metals (Continued)

Filtration Batch: 314134 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-314134/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-314134/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-314134/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-132136-2 MS	Outfall011_20230322_Comp_F	Dissolved	Water	Filtration	
570-132136-2 MSD	Outfall011_20230322_Comp_F	Dissolved	Water	Filtration	

Analysis Batch: 314166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total Recoverable	Water	200.8	314038
MB 570-314038/1-A	Method Blank	Total Recoverable	Water	200.8	314038
LCS 570-314038/2-A	Lab Control Sample	Total Recoverable	Water	200.8	314038
LCSD 570-314038/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	314038
570-132136-1 MS	Outfall011_20230322_Comp	Total Recoverable	Water	200.8	314038
570-132136-1 MSD	Outfall011_20230322_Comp	Total Recoverable	Water	200.8	314038

Analysis Batch: 314184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-2	Outfall011_20230322_Comp_F	Dissolved	Water	200.8	314134
MB 570-314134/1-A	Method Blank	Dissolved	Water	200.8	314134
LCS 570-314134/2-A	Lab Control Sample	Dissolved	Water	200.8	314134
LCSD 570-314134/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	314134
570-132136-2 MS	Outfall011_20230322_Comp_F	Dissolved	Water	200.8	314134
570-132136-2 MSD	Outfall011_20230322_Comp_F	Dissolved	Water	200.8	314134

Analysis Batch: 314463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	245.1	314071
570-132136-2	Outfall011_20230322_Comp_F	Dissolved	Water	245.1	314025
MB 570-314019/1-B	Method Blank	Dissolved	Water	245.1	314025
MB 570-314071/1-A	Method Blank	Total/NA	Water	245.1	314071
LCS 570-314019/2-B	Lab Control Sample	Dissolved	Water	245.1	314025
LCS 570-314071/2-A	Lab Control Sample	Total/NA	Water	245.1	314071
LCSD 570-314019/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	314025
LCSD 570-314071/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	314071
570-132136-1 MS	Outfall011_20230322_Comp	Total/NA	Water	245.1	314071
570-132136-1 MSD	Outfall011_20230322_Comp	Total/NA	Water	245.1	314071
570-132136-2 MS	Outfall011_20230322_Comp_F	Dissolved	Water	245.1	314025
570-132136-2 MSD	Outfall011_20230322_Comp_F	Dissolved	Water	245.1	314025

General Chemistry

Analysis Batch: 309190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	Kelada 01	
MB 570-309190/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-309190/12	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-309190/13	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-309190/10	Lab Control Sample	Total/NA	Water	Kelada 01	

General Chemistry

Analysis Batch: 313839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	SM 2130B	
LCSSRM 570-313839/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-313839/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-313839/3	Lab Control Sample	Total/NA	Water	SM 2130B	

Prep Batch: 313848

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	SM 5540C	
MB 570-313848/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-313848/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-313848/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	

Analysis Batch: 314090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	SM 5540C	313848
MB 570-313848/5-A	Method Blank	Total/NA	Water	SM 5540C	313848
LCS 570-313848/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	313848
LCSD 570-313848/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	313848

Prep Batch: 314145

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	BOD Prep	
USB 570-314145/1-A	Method Blank	Total/NA	Water	BOD Prep	
LCS 570-314145/2-A	Lab Control Sample	Total/NA	Water	BOD Prep	

Analysis Batch: 314596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	SM 2540D	
MB 570-314596/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-314596/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-314596/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 315156

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	SM 2540C	
MB 570-315156/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-315156/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-315156/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 315483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	SM 5210B	314145
USB 570-314145/1-A	Method Blank	Total/NA	Water	SM 5210B	314145
LCS 570-314145/2-A	Lab Control Sample	Total/NA	Water	SM 5210B	314145

Prep Batch: 316971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	Distill/Ammonia	
MB 570-316971/5-B	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-316971/6-B	Lab Control Sample	Total/NA	Water	Distill/Ammonia	

General Chemistry (Continued)

Prep Batch: 316971 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 570-316971/7-B	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	
570-132136-1 MS	Outfall011_20230322_Comp	Total/NA	Water	Distill/Ammonia	
570-132136-1 MSD	Outfall011_20230322_Comp	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 317033

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	350.1	316971
MB 570-316971/5-B	Method Blank	Total/NA	Water	350.1	316971
LCS 570-316971/6-B	Lab Control Sample	Total/NA	Water	350.1	316971
LCSD 570-316971/7-B	Lab Control Sample Dup	Total/NA	Water	350.1	316971
570-132136-1 MS	Outfall011_20230322_Comp	Total/NA	Water	350.1	316971
570-132136-1 MSD	Outfall011_20230322_Comp	Total/NA	Water	350.1	316971

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Comp

Client Sample ID: Outfall011_20230322_Comp
Lab Sample ID: 570-132136-1
Date Collected: 03/21/23 14:20
Matrix: Water
Date Received: 03/22/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			1051.7 mL	2 mL	314349	03/24/23 05:15	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	315862	03/31/23 00:44	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Prep	608			1500 mL	1 mL	314171	03/23/23 12:38	H1SH	EET CAL 4
Total/NA	Analysis	608.3		1	1 mL	1 mL	314768	03/26/23 14:29	N5Y3	EET CAL 4
	Instrument ID: GC52A									
Total/NA	Analysis	300.0		1	4 mL	4 mL	313921	03/23/23 02:07	PS	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	300.0		1	4 mL	4 mL	313922	03/23/23 02:07	PS	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	314.0		1	4 mL	4 mL	314154	03/23/23 20:09	PS	EET CAL 4
	Instrument ID: IC8									
Total/NA	Analysis	NO2NO3 Calc		1			314475	03/24/23 10:42	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total Recoverable	Prep	200.8			50 mL	50 mL	314038	03/23/23 07:42	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			314166	03/23/23 11:26	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Prep	245.1			25 mL	50 mL	314071	03/23/23 08:50	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			314463	03/23/23 18:18	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	316971	04/03/23 10:18	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	317033	04/03/23 12:15	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	309190	03/27/23 13:54	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			313839	03/22/23 18:38	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	315156	03/27/23 18:34	ZL7L	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	314596	03/24/23 16:00	UWCT	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Prep	BOD Prep					314145	03/23/23 11:21	U7UR	EET CAL 4
Total/NA	Analysis	SM 5210B		1	300 mL	300 mL	315483	03/23/23 11:51	TN8Z	EET CAL 4
	Instrument ID: BOD3									
Total/NA	Prep	SM 5540C			100 mL	100 mL	313848	03/22/23 20:00	TXA8	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	314090	03/22/23 20:57	TXA8	EET CAL 4
	Instrument ID: UV8									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Client Sample ID: Outfall011_20230322_Comp_F
Lab Sample ID: 570-132136-2

Date Collected: 03/21/23 14:20
Matrix: Water
Date Received: 03/22/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	314134	03/23/23 10:49	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			314184	03/23/23 12:34	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	314019	03/23/23 05:55	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	314025	03/23/23 06:08	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			314463	03/23/23 19:04	C0YH	EET CAL 4
	Instrument ID: HG8									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method	Method Description	Protocol	Laboratory
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
608.3	Organochlorine Pesticides in Water	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 5210B	BOD, 5-Day	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
608	Liquid-Liquid Extraction (Separatory Funnel)	EPA	EET CAL 4
625	Liquid-Liquid Extraction	EPA	EET CAL 4
BOD Prep	Preparation, BOD	SM	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Job ID: 570-132136-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132136-1	Outfall011_20230322_Comp	Water	03/21/23 14:20	03/22/23 18:25
570-132136-2	Outfall011_20230322_Comp_F	Water	03/21/23 14:20	03/22/23 18:25

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-132136 Chain of Custody

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp
"Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 ECI Project # 57013187"	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: michelle dallalah	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED																	
									R	R	R	R	R	R	R	R	R	R	R	R	C			
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl-, SO_4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	Turbidity, TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)	Total Recoverable Metals: (E200.8): Mn, Fe			Comments
Outfall 011	Outfall011_20230321_Comp	3/21/2023 1420	WM	500 mL Poly	1	HNO_3	90	Yes	X											X	X			Outfall 011 analyze for Mn and Fe.
			WM	1 L Glass Amber	2	None	110	No		X														
			WM	1L Poly	1	None	115	No			X													
			WM	500 mL Poly	2	None	120	No				X												
			WM	500 mL Poly	2	None	130	No					X											48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X										48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X								
			WM	1 L Glass Amber	2	None	170	No									X							
			WM	1 L Glass Amber	2	None	180	No										X						
			WM	1L Poly	1	None	185	No							X									
	Outfall011_20230321_Comp_Extra	3/21/2023 1420	WM	1 L Glass Amber	2	None	110	No		H														Hold
			WM	1 L Glass Amber	2	None	170	No									H							Hold
			WM	1 L Glass Amber	2	None	180	No														H		Hold

Legend: C=Conditional, R=Routine

Relinquished By: Michelle Dallalah	Date/Time: 3/22/23 13:52	Company: H&A	Received By:	Date/Time: 3/22/23 1352	EC
Relinquished By:	Date/Time: 3/22/23 1825	Company: EC	Received By:	Date/Time: 3/22/23 18:25	EC
Relinquished By:	Date/Time:	Company:	Received By:	Date/Time:	

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

2.3/2.3 1.6/1.6 soil

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:	ANALYSIS REQUIRED
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp	R R R R R C
"Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 ECI Project # 57013187"	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	
Sampler: michelle dallalah		

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)		Total Dissolved Metals: Mercury (E245.1)	Total Dissolved Metals: (E200.8): Mn, Fe						Comments
(2) 3/23 (3) (10)	Outfall011_20230321_Comp_F	3/21/2023 1420	WM	1L Poly	1	None	200	Yes	X					X						Filter and preserve w/in 24hrs of receipt at lab. Outfall 011 analyze for Mn and Fe.
Outfall 011			WM	borosilicate vials	2	None	320	No					X							Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
(1)	Outfall011_20230321_Comp	3/21/2023 1420	WM	500 mL Poly	1	NaOH	220	No		X										
			WM	2.5 Gal Cube	1	None	225	No			X									Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No												

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	3/22/23 15:57	H&A		3/22/23 1352 EC
			Received By	Date/Time:
	3/22/23 1825 EC			3/22/23 18:25 EC
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

2019-2020 Rainy Season
Version 4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212218.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-132136-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 4/7/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall - 011 Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall011_20230322_Comp (570-132136-1)	3/21/23	14:20 Pacific		Water			X	2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 03/23/23 1342	Company: EC	Received by:	Date/Time: 3.24.23 920	Company: DHL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.7c

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132136-1

Login Number: 132136
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/15/2023 10:50:58 AM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall - 011 Comp

JOB NUMBER

570-132136-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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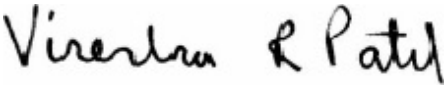
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132136-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132136-2

Comments
No additional comments.

Receipt
The samples were received on 3/22/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.6º C and 2.3º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument 12D5 exceeded this criteria: (CCV 320-667328/2), (LCS 320-666115/2-A), (LCSD 320-666115/3-A) and (MB 320-666115/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument 12D5 exceeded this criteria: Outfall011_20230322_Comp (570-132136-1) and (CCV 320-667636/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Comp

Client Sample ID: Outfall011_20230322_Comp
Lab Sample ID: 570-132136-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	0.0000018	J,DX MB q	0.000047	0.00000069	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000090	J,DX MB	0.000047	0.0000015	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000022	J,DX MB	0.000047	0.00000093	ug/L	1		1613B	Total/NA
OCDD	0.000055	J,DX MB	0.000094	0.0000016	ug/L	1		1613B	Total/NA
OCDF	0.0000058	J,DX MB	0.000094	0.00000086	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000032	J,DX MB q	0.000047	0.00000064	ug/L	1		1613B	Total/NA
Total HpCDD	0.000016	J,DX MB	0.000047	0.0000015	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000041	J,DX MB	0.000047	0.0000010	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: Outfall011_20230322_Comp
Lab Sample ID: 570-132136-1
Date Collected: 03/21/23 14:20
Matrix: Water
Date Received: 03/22/23 18:25

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000094	0.00000048	ug/L		04/07/23 06:53	04/14/23 04:01	1
2,3,7,8-TCDF	ND		0.0000094	0.00000026	ug/L		04/07/23 06:53	04/14/23 04:01	1
1,2,3,7,8-PeCDD	ND		0.000047	0.00000053	ug/L		04/07/23 06:53	04/14/23 04:01	1
1,2,3,7,8-PeCDF	ND		0.000047	0.00000037	ug/L		04/07/23 06:53	04/14/23 04:01	1
2,3,4,7,8-PeCDF	ND		0.000047	0.00000043	ug/L		04/07/23 06:53	04/14/23 04:01	1
1,2,3,4,7,8-HxCDD	**0.0000018**	**J,DX MB q**	0.000047	0.00000069	ug/L		04/07/23 06:53	04/14/23 04:01	1
1,2,3,6,7,8-HxCDD	ND		0.000047	0.00000064	ug/L		04/07/23 06:53	04/14/23 04:01	1
1,2,3,7,8,9-HxCDD	ND		0.000047	0.00000059	ug/L		04/07/23 06:53	04/14/23 04:01	1
1,2,3,4,7,8-HxCDF	ND		0.000047	0.00000044	ug/L		04/07/23 06:53	04/14/23 04:01	1
1,2,3,6,7,8-HxCDF	ND		0.000047	0.00000041	ug/L		04/07/23 06:53	04/14/23 04:01	1
1,2,3,7,8,9-HxCDF	ND		0.000047	0.00000061	ug/L		04/07/23 06:53	04/14/23 04:01	1
2,3,4,6,7,8-HxCDF	ND		0.000047	0.00000040	ug/L		04/07/23 06:53	04/14/23 04:01	1
1,2,3,4,6,7,8-HpCDD	**0.0000090**	**J,DX MB**	0.000047	0.0000015	ug/L		04/07/23 06:53	04/14/23 04:01	1
1,2,3,4,6,7,8-HpCDF	**0.0000022**	**J,DX MB**	0.000047	0.00000093	ug/L		04/07/23 06:53	04/14/23 04:01	1
1,2,3,4,7,8,9-HpCDF	ND		0.000047	0.0000012	ug/L		04/07/23 06:53	04/14/23 04:01	1
OCDD	**0.000055**	**J,DX MB**	0.000094	0.0000016	ug/L		04/07/23 06:53	04/14/23 04:01	1
OCDF	**0.0000058**	**J,DX MB**	0.000094	0.00000086	ug/L		04/07/23 06:53	04/14/23 04:01	1
Total TCDD	ND		0.0000094	0.00000048	ug/L		04/07/23 06:53	04/14/23 04:01	1
Total TCDF	ND		0.0000094	0.00000026	ug/L		04/07/23 06:53	04/14/23 04:01	1
Total PeCDD	ND		0.000047	0.00000053	ug/L		04/07/23 06:53	04/14/23 04:01	1
Total PeCDF	ND		0.000047	0.00000046	ug/L		04/07/23 06:53	04/14/23 04:01	1
Total HxCDD	**0.0000032**	**J,DX MB q**	0.000047	0.00000064	ug/L		04/07/23 06:53	04/14/23 04:01	1
Total HxCDF	ND		0.000047	0.00000061	ug/L		04/07/23 06:53	04/14/23 04:01	1
Total HpCDD	**0.000016**	**J,DX MB**	0.000047	0.0000015	ug/L		04/07/23 06:53	04/14/23 04:01	1
Total HpCDF	**0.0000041**	**J,DX MB**	0.000047	0.0000010	ug/L		04/07/23 06:53	04/14/23 04:01	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*65*		*25 - 164*	*04/07/23 06:53*	*04/14/23 04:01*	*1*
13C-2,3,7,8-TCDF	*57*		*24 - 169*	*04/07/23 06:53*	*04/14/23 04:01*	*1*
13C-1,2,3,7,8-PeCDD	*61*		*25 - 181*	*04/07/23 06:53*	*04/14/23 04:01*	*1*
13C-1,2,3,7,8-PeCDF	*59*		*24 - 185*	*04/07/23 06:53*	*04/14/23 04:01*	*1*
13C-2,3,4,7,8-PeCDF	*57*		*21 - 178*	*04/07/23 06:53*	*04/14/23 04:01*	*1*
13C-1,2,3,4,7,8-HxCDD	*57*		*32 - 141*	*04/07/23 06:53*	*04/14/23 04:01*	*1*
13C-1,2,3,6,7,8-HxCDD	*75*		*28 - 130*	*04/07/23 06:53*	*04/14/23 04:01*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: Outfall011_20230322_Comp
Lab Sample ID: 570-132136-1
Date Collected: 03/21/23 14:20
Matrix: Water
Date Received: 03/22/23 18:25

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,7,8-HxCDF	52		26 - 152	04/07/23 06:53	04/14/23 04:01	1
13C-1,2,3,6,7,8-HxCDF	69		26 - 123	04/07/23 06:53	04/14/23 04:01	1
13C-1,2,3,7,8,9-HxCDF	61		29 - 147	04/07/23 06:53	04/14/23 04:01	1
13C-2,3,4,6,7,8-HxCDF	68		28 - 136	04/07/23 06:53	04/14/23 04:01	1
13C-1,2,3,4,6,7,8-HpCDD	64		23 - 140	04/07/23 06:53	04/14/23 04:01	1
13C-1,2,3,4,6,7,8-HpCDF	59		28 - 143	04/07/23 06:53	04/14/23 04:01	1
13C-1,2,3,4,7,8,9-HpCDF	59		26 - 138	04/07/23 06:53	04/14/23 04:01	1
13C-OCDD	51		17 - 157	04/07/23 06:53	04/14/23 04:01	1
13C-OCDF	49		17 - 157	04/07/23 06:53	04/14/23 04:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	82		35 - 197	04/07/23 06:53	04/14/23 04:01	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Comp

Job ID: 570-132136-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (35-197)								
570-132136-1	Outfall011_20230322_Comp	82								
MB 320-666115/1-A	Method Blank	85								

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (31-191)								
LCS 320-666115/2-A	Lab Control Sample	85								
LCSD 320-666115/3-A	Lab Control Sample Dup	86								

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Job ID: 570-132136-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-132136-1	Outfall011_20230322_Comp	65	57	61	59	57	57	75	52
MB 320-666115/1-A	Method Blank	66	58	65	59	57	59	69	51

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-132136-1	Outfall011_20230322_Comp	69	61	68	64	59	59	51	49
MB 320-666115/1-A	Method Blank	65	62	68	66	58	60	56	54

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-666115/2-A	Lab Control Sample	65	57	66	63	61	58	73	51
LCSD 320-666115/3-A	Lab Control Sample Dup	66	63	69	68	65	54	66	44

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-666115/2-A	Lab Control Sample	69	60	68	65	59	59	51	52
LCSD 320-666115/3-A	Lab Control Sample Dup	60	63	66	68	58	63	61	59

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc. Job ID: 570-132136-2

Project/Site: Boeing NPDES SSFL - Routine Outfall - 011

Comp

HxDF = 13C-1,2,3,6,7,8-HxCDF

HxCF = 13C-1,2,3,7,8,9-HxCDF

13CHxCF = 13C-2,3,4,6,7,8-HxCDF

HpCDD = 13C-1,2,3,4,6,7,8-HpCDD

HpCDF = 13C-1,2,3,4,6,7,8-HpCDF

HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF

OCDD = 13C-OCDD

OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-666115/1-A
Matrix: Water
Analysis Batch: 667328

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 666115

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.0000010	ug/L		04/07/23 06:53	04/13/23 02:14	1
2,3,7,8-TCDF	ND		0.000010	0.00000064	ug/L		04/07/23 06:53	04/13/23 02:14	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000086	ug/L		04/07/23 06:53	04/13/23 02:14	1
1,2,3,7,8-PeCDF	0.00000111	J,DX q	0.000050	0.00000050	ug/L		04/07/23 06:53	04/13/23 02:14	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000061	ug/L		04/07/23 06:53	04/13/23 02:14	1
1,2,3,4,7,8-HxCDD	0.00000259	J,DX q	0.000050	0.00000084	ug/L		04/07/23 06:53	04/13/23 02:14	1
1,2,3,6,7,8-HxCDD	0.00000163	J,DX q	0.000050	0.00000076	ug/L		04/07/23 06:53	04/13/23 02:14	1
1,2,3,7,8,9-HxCDD	0.00000167	J,DX	0.000050	0.00000071	ug/L		04/07/23 06:53	04/13/23 02:14	1
1,2,3,4,7,8-HxCDF	0.00000131	J,DX	0.000050	0.00000068	ug/L		04/07/23 06:53	04/13/23 02:14	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000062	ug/L		04/07/23 06:53	04/13/23 02:14	1
1,2,3,7,8,9-HxCDF	ND		0.000050	0.00000087	ug/L		04/07/23 06:53	04/13/23 02:14	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.00000059	ug/L		04/07/23 06:53	04/13/23 02:14	1
1,2,3,4,6,7,8-HpCDD	0.00000411	J,DX	0.000050	0.00000094	ug/L		04/07/23 06:53	04/13/23 02:14	1
1,2,3,4,6,7,8-HpCDF	0.00000227	J,DX q	0.000050	0.00000079	ug/L		04/07/23 06:53	04/13/23 02:14	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.00000099	ug/L		04/07/23 06:53	04/13/23 02:14	1
OCDD	0.0000401	J,DX	0.00010	0.0000011	ug/L		04/07/23 06:53	04/13/23 02:14	1
OCDF	0.00000736	J,DX q	0.00010	0.0000012	ug/L		04/07/23 06:53	04/13/23 02:14	1
Total TCDD	0.00000181	J,DX	0.000010	0.0000010	ug/L		04/07/23 06:53	04/13/23 02:14	1
Total TCDF	ND		0.000010	0.00000064	ug/L		04/07/23 06:53	04/13/23 02:14	1
Total PeCDD	ND		0.000050	0.00000086	ug/L		04/07/23 06:53	04/13/23 02:14	1
Total PeCDF	0.00000172	J,DX q	0.000050	0.00000056	ug/L		04/07/23 06:53	04/13/23 02:14	1
Total HxCDD	0.00000589	J,DX q	0.000050	0.00000077	ug/L		04/07/23 06:53	04/13/23 02:14	1
Total HxCDF	0.00000131	J,DX	0.000050	0.00000069	ug/L		04/07/23 06:53	04/13/23 02:14	1
Total HpCDD	0.00000669	J,DX q	0.000050	0.00000094	ug/L		04/07/23 06:53	04/13/23 02:14	1
Total HpCDF	0.00000227	J,DX q	0.000050	0.00000089	ug/L		04/07/23 06:53	04/13/23 02:14	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*66*		*25 - 164*	*04/07/23 06:53*	*04/13/23 02:14*	*1*
13C-2,3,7,8-TCDF	*58*		*24 - 169*	*04/07/23 06:53*	*04/13/23 02:14*	*1*
13C-1,2,3,7,8-PeCDD	*65*		*25 - 181*	*04/07/23 06:53*	*04/13/23 02:14*	*1*
13C-1,2,3,7,8-PeCDF	*59*		*24 - 185*	*04/07/23 06:53*	*04/13/23 02:14*	*1*
13C-2,3,4,7,8-PeCDF	*57*		*21 - 178*	*04/07/23 06:53*	*04/13/23 02:14*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-666115/1-A
Matrix: Water
Analysis Batch: 667328

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 666115

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,7,8-HxCDD	59		32 - 141	04/07/23 06:53	04/13/23 02:14	1
13C-1,2,3,6,7,8-HxCDD	69		28 - 130	04/07/23 06:53	04/13/23 02:14	1
13C-1,2,3,4,7,8-HxCDF	51		26 - 152	04/07/23 06:53	04/13/23 02:14	1
13C-1,2,3,6,7,8-HxCDF	65		26 - 123	04/07/23 06:53	04/13/23 02:14	1
13C-1,2,3,7,8,9-HxCDF	62		29 - 147	04/07/23 06:53	04/13/23 02:14	1
13C-2,3,4,6,7,8-HxCDF	68		28 - 136	04/07/23 06:53	04/13/23 02:14	1
13C-1,2,3,4,6,7,8-HpCDD	66		23 - 140	04/07/23 06:53	04/13/23 02:14	1
13C-1,2,3,4,6,7,8-HpCDF	58		28 - 143	04/07/23 06:53	04/13/23 02:14	1
13C-1,2,3,4,7,8,9-HpCDF	60		26 - 138	04/07/23 06:53	04/13/23 02:14	1
13C-OCDD	56		17 - 157	04/07/23 06:53	04/13/23 02:14	1
13C-OCDF	54		17 - 157	04/07/23 06:53	04/13/23 02:14	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	85		35 - 197	04/07/23 06:53	04/13/23 02:14	1

Lab Sample ID: LCS 320-666115/2-A
Matrix: Water
Analysis Batch: 667328

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 666115

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000176		ug/L		88	67 - 158
2,3,7,8-TCDF	0.000200	0.000187		ug/L		93	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.000866		ug/L		87	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.000857		ug/L		86	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000877		ug/L		88	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.000825		ug/L		82	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000894		ug/L		89	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000888		ug/L		89	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.000810		ug/L		81	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000844		ug/L		84	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.000856		ug/L		86	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000843		ug/L		84	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.000844		ug/L		84	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.000893		ug/L		89	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000850		ug/L		85	78 - 138
OCDD	0.00200	0.00182		ug/L		91	78 - 144
OCDF	0.00200	0.00178		ug/L		89	63 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	65		20 - 175
13C-2,3,7,8-TCDF	57		22 - 152
13C-1,2,3,7,8-PeCDD	66		21 - 227
13C-1,2,3,7,8-PeCDF	63		21 - 192
13C-2,3,4,7,8-PeCDF	61		13 - 328
13C-1,2,3,4,7,8-HxCDD	58		21 - 193
13C-1,2,3,6,7,8-HxCDD	73		25 - 163
13C-1,2,3,4,7,8-HxCDF	51		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-666115/2-A
Matrix: Water
Analysis Batch: 667328

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 666115

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	69		21 - 159
13C-1,2,3,7,8,9-HxCDF	60		17 - 205
13C-2,3,4,6,7,8-HxCDF	68		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	65		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	59		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	59		20 - 186
13C-OCDD	51		13 - 199
13C-OCDF	52		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	85		31 - 191

Lab Sample ID: LCSD 320-666115/3-A
Matrix: Water
Analysis Batch: 667328

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 666115

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000194		ug/L		97	67 - 158	10	50
2,3,7,8-TCDF			0.000200	0.000206		ug/L		103	75 - 158	10	50
1,2,3,7,8-PeCDD			0.00100	0.000924		ug/L		92	70 - 142	7	50
1,2,3,7,8-PeCDF			0.00100	0.000943		ug/L		94	80 - 134	10	50
2,3,4,7,8-PeCDF			0.00100	0.000969		ug/L		97	68 - 160	10	50
1,2,3,4,7,8-HxCDD			0.00100	0.000839		ug/L		84	70 - 164	2	50
1,2,3,6,7,8-HxCDD			0.00100	0.000920		ug/L		92	76 - 134	3	50
1,2,3,7,8,9-HxCDD			0.00100	0.000974		ug/L		97	64 - 162	9	50
1,2,3,4,7,8-HxCDF			0.00100	0.000857		ug/L		86	72 - 134	6	50
1,2,3,6,7,8-HxCDF			0.00100	0.000857		ug/L		86	84 - 130	2	50
1,2,3,7,8,9-HxCDF			0.00100	0.000841		ug/L		84	78 - 130	2	50
2,3,4,6,7,8-HxCDF			0.00100	0.000863		ug/L		86	70 - 156	2	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000839		ug/L		84	70 - 140	1	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.000906		ug/L		91	82 - 122	1	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000876		ug/L		88	78 - 138	3	50
OCDD			0.00200	0.00179		ug/L		89	78 - 144	2	50
OCDF			0.00200	0.00177		ug/L		89	63 - 170	0	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	66		20 - 175
13C-2,3,7,8-TCDF	63		22 - 152
13C-1,2,3,7,8-PeCDD	69		21 - 227
13C-1,2,3,7,8-PeCDF	68		21 - 192
13C-2,3,4,7,8-PeCDF	65		13 - 328
13C-1,2,3,4,7,8-HxCDD	54		21 - 193
13C-1,2,3,6,7,8-HxCDD	66		25 - 163
13C-1,2,3,4,7,8-HxCDF	44		19 - 202
13C-1,2,3,6,7,8-HxCDF	60		21 - 159
13C-1,2,3,7,8,9-HxCDF	63		17 - 205
13C-2,3,4,6,7,8-HxCDF	66		22 - 176

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-666115/3-A
Matrix: Water
Analysis Batch: 667328

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 666115

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDD	68		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	58		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	63		20 - 186
13C-OCDD	61		13 - 199
13C-OCDF	59		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	86		31 - 191

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Comp

Specialty Organics

Prep Batch: 666115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	1613B	
MB 320-666115/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-666115/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-666115/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 667328

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-666115/1-A	Method Blank	Total/NA	Water	1613B	666115
LCS 320-666115/2-A	Lab Control Sample	Total/NA	Water	1613B	666115
LCSD 320-666115/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	666115

Analysis Batch: 667636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	1613B	666115

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Comp

Client Sample ID: Outfall011_20230322_Comp
Lab Sample ID: 570-132136-1

Date Collected: 03/21/23 14:20
Matrix: Water
Date Received: 03/22/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			1059.4 mL	20.0 uL	666115	04/07/23 06:53	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	667636	04/14/23 04:01	DB	EET SAC
	Instrument ID: 12D5									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	06-01-23
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-24
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-24
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	02-28-26
Utah	NELAP	CA000442021-12	02-28-23 *
Virginia	NELAP	460278	03-14-24
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Job ID: 570-132136-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132136-1	Outfall011_20230322_Comp	Water	03/21/23 14:20	03/22/23 18:25

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-132136 Chain of Custody

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp
"Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 ECI Project # 57013187"	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)
Sampler: michelle dallalah	

									ANALYSIS REQUIRED															
									R	R	R	R	R	R	R	R	R	R	R	C		
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl-, SO_4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	Turbidity, TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)	Total Recoverable Metals: (E200.8): Mn, Fe			Comments
Outfall 011	Outfall011_20230321_Comp	3/21/2023 1420	WM	500 mL Poly	1	HNO_3	90	Yes	X											X	X		Outfall 011 analyze for Mn and Fe.
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	1L Poly	1	None	115	No			X												
			WM	500 mL Poly	2	None	120	No				X											
			WM	500 mL Poly	2	None	130	No					X										48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X									48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X							
			WM	1 L Glass Amber	2	None	170	No									X						
			WM	1 L Glass Amber	2	None	180	No										X					
			WM	1L Poly	1	None	185	No							X								
	Outfall011_20230321_Comp_Extra	3/21/2023 1420	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	1 L Glass Amber	1	None	170	No									H						Hold
			WM	1 L Glass Amber	2	None	180	No										H					Hold

Legend: C=Conditional, R=Routine

Relinquished By: Michelle Dallalah	Date/Time: 3/22/23 13:52	Company: H&A	Received By:	Date/Time: 3/22/23 1352	EC
Relinquished By:	Date/Time: 3/22/23 1825	Company: EC	Received By:	Date/Time: 3/22/23 18:25	EC
Relinquished By:	Date/Time:	Company:	Received By:	Date/Time:	

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

2.3/2.3 1.6/1.6 soil

2019-2020 Rainy Season
Version 4

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp
"Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 ECI Project # 57013187"	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: michelle dallalah	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED												
									R	R	R	R	R	C							
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)		Total Dissolved Metals: Mercury (E245.1)	Total Dissolved Metals: (E200.8): Mn, Fe							Comments
(2) (3) (3) Outfall 011	3/23 Outfall011_20230321_Comp_F	3/21/2023 1420	WM	1L Poly	1	None	200	Yes	X					X							Filter and preserve w/in 24hrs of receipt at lab. Outfall 011 analyze for Mn and Fe.
			WM	borosilicate vials	2	None	320	No					X								Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
(1)	Outfall011_20230321_Comp	3/21/2023 1420	WM	500 mL Poly	1	NaOH	220	No		X											
			WM	2.5 Gal Cube	1	None	225	No			X										Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No													

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	3/22/23 15:57	H&A		3/22/23 1352 EC
	3/22/23 1825	EC		3/22/23 18:25 EC

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212218.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-132136-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 4/7/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall - 011 Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall011_20230322_Comp (570-132136-1)	3/21/23	14:20 Pacific		Water			X	2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		03/23/23 1342			3.24.23 920	BEK
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.7c

Ver: 06/08/2021

4/15/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132136-2

Login Number: 132136
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132136-2

Login Number: 132136
List Number: 2
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 03/24/23 02:17 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.7c 1.4c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/26/2023 8:06:58 PM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall - 011 Comp

JOB NUMBER

570-132136-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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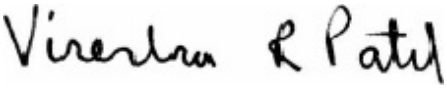
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132136-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132136-3

Comments
No additional comments.

Receipt
The samples were received on 3/22/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.6º C and 2.3º C.

RAD
Methods 900.0, 9310: Gross Alpha Beta prep batch 160-607836:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall011_20230322_Comp (570-132136-1), (LCS 160-607836/2-A), (LCSB 160-607836/3-A), (MB 160-607836/1-A), (570-132013-J-1-C), (570-132013-J-1-F DU), (570-132013-J-1-D MS) and (570-132013-J-1-E MSBT)

Method 901.1: Gamma Prep Batch 160-605283
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Outfall011_20230322_Comp (570-132136-1), (570-131073-AT-1-B) and (570-131073-AT-1-C DU)

Methods 903.0, 9315: Radium-226 prep batch 160-605743:

Job ID: 570-132136-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall011_20230322_Comp (570-132136-1), (LCS 160-605743/2-A), (MB 160-605743/1-A), (240-182534-F-2-A) and (240-182534-E-2-A DU)

Methods 904.0, 9320: Radium-228 Batch 605748
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall011_20230322_Comp (570-132136-1), (LCS 160-605748/2-A), (MB 160-605748/1-A), (240-182534-F-2-B) and (240-182534-E-2-B DU)

Method 905: Strontium-90 batch 606565
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall011_20230322_Comp (570-132136-1), (LCS 160-606565/2-A), (LCSD 160-606565/3-A) and (MB 160-606565/1-A)

Method 906.0: Tritium 607890
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are decay corrected to sample date and time as the Activity Reference Date. Outfall011_20230322_Comp (570-132136-1), (LCS 160-607890/2-A), (MB 160-607890/1-A), (570-131938-I-1-A), (570-131938-I-1-B DU) and (570-132136-Q-1-B MS)

Methods A-01-R, U-02-RC: Isotopic Uranium batch 607182
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall011_20230322_Comp (570-132136-1), (LCS 160-607182/2-A), (MB 160-607182/1-A), (570-131945-N-1-E) and (570-131945-N-1-F DU)

Method PrecSep-7: Strontium-90 Prep Batch 160-606565

Insufficient sample volume was available to perform a sample duplicate for the following samples: Outfall011_20230322_Comp (570-132136-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 160-606565

The carrier recovery is outside the lower control limit (40%) for the following samples: Outfall011_20230322_Comp (570-132136-1). There was physical evidence of matrix interference apparent during the initial preparation of the sample. The QC samples associated with the batch have acceptable carrier recovery indicating the presence of matrix interference.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Client Sample ID: Outfall011_20230322_Comp
Lab Sample ID: 570-132136-1

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: Outfall011_20230322_Comp
Lab Sample ID: 570-132136-1
Date Collected: 03/21/23 14:20
Matrix: Water
Date Received: 03/22/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.629	U	1.11	1.11	3.00	1.92	pCi/L	04/17/23 13:56	04/25/23 16:52	1
Gross Beta	0.902	U	0.614	0.620	4.00	0.939	pCi/L	04/17/23 13:56	04/25/23 16:52	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: Outfall011_20230322_Comp
Lab Sample ID: 570-132136-1
Date Collected: 03/21/23 14:20
Matrix: Water
Date Received: 03/22/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-0.293	U	8.39	8.39	20.0	10.7	pCi/L	03/28/23 16:33	04/12/23 16:47	1
Potassium-40	-24.2	U	92.3	92.4		143	pCi/L	03/28/23 16:33	04/12/23 16:47	1

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: Outfall011_20230322_Comp **Lab Sample ID: 570-132136-1**
Date Collected: 03/21/23 14:20 **Matrix: Water**
Date Received: 03/22/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.233		0.141	0.142	1.00	0.198	pCi/L	03/31/23 10:18	04/25/23 20:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.3*		*30 - 110*	*03/31/23 10:18*	*04/25/23 20:50*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: Outfall011_20230322_Comp
Date Collected: 03/21/23 14:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132136-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0151	U	0.267	0.267	1.00	0.500	pCi/L	03/31/23 10:42	04/21/23 12:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.3*		*30 - 110*	*03/31/23 10:42*	*04/21/23 12:28*	*1*
Y Carrier	*92.3*		*30 - 110*	*03/31/23 10:42*	*04/21/23 12:28*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: Outfall011_20230322_Comp
Date Collected: 03/21/23 14:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132136-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.382	U	0.452	0.453	3.00	0.746	pCi/L	04/07/23 11:12	04/17/23 19:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*85.7*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:13*	*1*
Y Carrier	*35.9*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:13*	*1*

Client Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: Outfall011_20230322_Comp
Lab Sample ID: 570-132136-1
Date Collected: 03/21/23 14:20
Matrix: Water
Date Received: 03/22/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-86.0	U	219	219	500	416	pCi/L	04/18/23 11:12	04/19/23 09:32	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: Outfall011_20230322_Comp
Lab Sample ID: 570-132136-1
Date Collected: 03/21/23 14:20
Matrix: Water
Date Received: 03/22/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.113	U	0.1115	0.1117	1.00	0.132	pCi/L	04/12/23 15:01	04/17/23 22:46	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*81.0*		*30 - 110*	*04/12/23 15:01*	*04/17/23 22:46*	*1*

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-132136-1	Outfall011_20230322_Comp	87.3
LCS 160-605743/2-A	Lab Control Sample	83.5
MB 160-605743/1-A	Method Blank	91.9

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-132136-1	Outfall011_20230322_Comp	87.3	92.3
LCS 160-605748/2-A	Lab Control Sample	83.5	96.4
MB 160-605748/1-A	Method Blank	91.9	95.3

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-132136-1	Outfall011_20230322_Comp	85.7	35.9
LCS 160-606565/2-A	Lab Control Sample	86.3	77.0
LCSD 160-606565/3-A	Lab Control Sample Dup	85.1	69.9
MB 160-606565/1-A	Method Blank	86.6	81.9

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-132136-1	Outfall011_20230322_Comp	81.0
LCS 160-607182/2-A	Lab Control Sample	76.8
MB 160-607182/1-A	Method Blank	81.7

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-607836/1-A
Matrix: Water
Analysis Batch: 608625

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 607836

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.3289	U	0.689	0.690	3.00	1.20	pCi/L	04/17/23 13:56	04/24/23 19:44	1
Gross Beta	-0.3433	U	0.470	0.471	4.00	0.893	pCi/L	04/17/23 13:56	04/24/23 19:44	1

Lab Sample ID: LCS 160-607836/2-A
Matrix: Water
Analysis Batch: 608625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607836

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	65.01		9.17	3.00	2.07	pCi/L	129	75 - 125

Lab Sample ID: LCSB 160-607836/3-A
Matrix: Water
Analysis Batch: 608669

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607836

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.3	73.26		7.85	4.00	0.822	pCi/L	100	75 - 125

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-605283/1-A
Matrix: Water
Analysis Batch: 607160

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605283

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.793	U	6.67	6.68	20.0	7.49	pCi/L	03/28/23 16:33	04/12/23 04:01	1
Potassium-40	27.15	U	82.6	82.7		106	pCi/L	03/28/23 16:33	04/12/23 04:01	1

Lab Sample ID: LCS 160-605283/2-A
Matrix: Water
Analysis Batch: 607188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605283

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	139700		16600		562	pCi/L	103	75 - 125
Cesium-137	40800	39690		4740	20.0	156	pCi/L	97	75 - 125
Cobalt-60	17700	17220		2060		78.1	pCi/L	97	75 - 125

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-605743/1-A
Matrix: Water
Analysis Batch: 608689

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605743

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.004855	U	0.0609	0.0609	1.00	0.127	pCi/L	03/31/23 10:18	04/25/23 18:44	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.9*		*30 - 110*	*03/31/23 10:18*	*04/25/23 18:44*	*1*

Lab Sample ID: LCS 160-605743/2-A
Matrix: Water
Analysis Batch: 608689

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605743

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	11.92		1.29	1.00	0.143	pCi/L	105	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*83.5*		*30 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-605748/1-A
Matrix: Water
Analysis Batch: 608478

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605748

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.07730	U	0.234	0.234	1.00	0.422	pCi/L	03/31/23 10:42	04/21/23 12:15	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.9*		*30 - 110*	*03/31/23 10:42*	*04/21/23 12:15*	*1*
Y Carrier	*95.3*		*30 - 110*	*03/31/23 10:42*	*04/21/23 12:15*	*1*

Lab Sample ID: LCS 160-605748/2-A
Matrix: Water
Analysis Batch: 608478

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605748

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.02	9.911		1.33	1.00	0.456	pCi/L	124	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*83.5*		*30 - 110*
Y Carrier	*96.4*		*30 - 110*

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-606565/1-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606565

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.1675	U	0.204	0.204	3.00	0.337	pCi/L	04/07/23 11:12	04/17/23 19:03	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*86.6*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:03*	*1*
Y Carrier	*81.9*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:03*	*1*

Lab Sample ID: LCS 160-606565/2-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606565

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.34	7.570		0.853	3.00	0.305	pCi/L	103	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*86.3*		*30 - 110*
Y Carrier	*77.0*		*30 - 110*

Lab Sample ID: LCSD 160-606565/3-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 606565

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.34	7.501		0.887	3.00	0.401	pCi/L	102	75 - 125	0.04	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*85.1*		*30 - 110*
Y Carrier	*69.9*		*30 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-607890/1-A
Matrix: Water
Analysis Batch: 608161

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 607890

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-102.7	U	224	224	500	433	pCi/L	04/18/23 11:12	04/19/23 06:41	1

Method: 906.0 - Tritium, Total (LSC) (Continued)

Lab Sample ID: LCS 160-607890/2-A
Matrix: Water
Analysis Batch: 608161

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607890

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2090	1604		396	500	420	pCi/L	77	75 - 125		

Lab Sample ID: 570-132136-1 MS
Matrix: Water
Analysis Batch: 608161

Client Sample ID: Outfall011_20230322_Comp
Prep Type: Total/NA
Prep Batch: 607890

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium	-86.0	U	2100	1572		394	500	420	pCi/L	75	60 - 140		

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-607182/1-A
Matrix: Water
Analysis Batch: 607712

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 607182

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.08287	U	0.138	0.138	1.00	0.229	pCi/L	04/12/23 15:01	04/17/23 22:47	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*81.7*		*30 - 110*	*04/12/23 15:01*	*04/17/23 22:47*	*1*

Lab Sample ID: LCS 160-607182/2-A
Matrix: Water
Analysis Batch: 607726

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607182

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	14.02		1.67	1.00	0.196	pCi/L	110	75 - 125		
Uranium-238			13.0	15.41		1.79	1.00	0.168	pCi/L	118	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*76.8*		*30 - 110*

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Rad

Prep Batch: 605283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	Fill_Geo-0	
MB 160-605283/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-605283/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 605743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	PrecSep-21	
MB 160-605743/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-605743/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 605748

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	PrecSep_0	
MB 160-605748/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-605748/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Prep Batch: 606565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	PrecSep-7	
MB 160-606565/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-606565/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-606565/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 607182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	ExtChrom	
MB 160-607182/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-607182/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 607836

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	Evaporation	
MB 160-607836/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-607836/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-607836/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Prep Batch: 607890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132136-1	Outfall011_20230322_Comp	Total/NA	Water	LSC_Dist_Susp	
MB 160-607890/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-607890/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
570-132136-1 MS	Outfall011_20230322_Comp	Total/NA	Water	LSC_Dist_Susp	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011 Comp

Client Sample ID: Outfall011_20230322_Comp
Lab Sample ID: 570-132136-1
Date Collected: 03/21/23 14:20
Matrix: Water
Date Received: 03/22/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Evaporation			200.01 mL	1.0 g	607836	04/17/23 13:56	MST	EET SL
Total/NA	Analysis	900.0		1	1.0 mL	1.0 mL	608691	04/25/23 16:52	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	605283	03/28/23 16:33	SAC	EET SL
Total/NA	Analysis	901.1		1			607188	04/12/23 16:47	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	PrecSep-21			995.13 mL	1.0 g	605743	03/31/23 10:18	DJP	EET SL
Total/NA	Analysis	903.0		1			608689	04/25/23 20:50	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			995.13 mL	1.0 g	605748	03/31/23 10:42	DJP	EET SL
Total/NA	Analysis	904.0		1			608479	04/21/23 12:28	FLC	EET SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	PrecSep-7			999.72 mL	1.0 g	606565	04/07/23 11:12	DJP	EET SL
Total/NA	Analysis	905		1			607842	04/17/23 19:13	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	LSC_Dist_Susp			99.30 mL	1.0 g	607890	04/18/23 11:12	ZR	EET SL
Total/NA	Analysis	906.0		1			608161	04/19/23 09:32	REV	EET SL
	Instrument ID: LSC3180									
Total/NA	Prep	ExtChrom			500.13 mL	1.0 mL	607182	04/12/23 15:01	SRE	EET SL
Total/NA	Analysis	A-01-R		1			607723	04/17/23 22:46	FLC	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	06-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-23
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132136-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 011
Comp

Job ID: 570-132136-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132136-1	Outfall011_20230322_Comp	Water	03/21/23 14:20	03/22/23 18:25

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-132136 Chain of Custody

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp
"Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 ECI Project # 57013187"	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: michelle dallalah	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED																	
									R	R	R	R	R	R	R	R	R	R	R	R	C			
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl-, SO_4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	Turbidity, TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)	Total Recoverable Metals: (E200.8): Mn, Fe			Comments
Outfall 011	Outfall011_20230321_Comp	3/21/2023 1420	WM	500 mL Poly	1	HNO_3	90	Yes	X											X	X			Outfall 011 analyze for Mn and Fe.
			WM	1 L Glass Amber	2	None	110	No		X															
			WM	1L Poly	1	None	115	No			X														
			WM	500 mL Poly	2	None	120	No				X													
			WM	500 mL Poly	2	None	130	No					X												48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X										48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X								
			WM	1 L Glass Amber	2	None	170	No									X							
			WM	1 L Glass Amber	2	None	180	No										X						
			WM	1L Poly	1	None	185	No							X									
	Outfall011_20230321_Comp_Extra	3/21/2023 1420	WM	1 L Glass Amber	2	None	110	No		H														Hold
			WM	1 L Glass Amber	2	None	170	No									H							Hold
			WM	1 L Glass Amber	2	None	180	No										H						Hold

Legend: C=Conditional, R=Routine

Relinquished By: Michelle Dallalah	Date/Time: 3/22/23 13:52	Company: H&A	Received By:	Date/Time: 3/22/23 1352	EC
Relinquished By:	Date/Time: 3/22/23 1825	Company: EC	Received By:	Date/Time: 3/22/23 18:25	EC
Relinquished By:	Date/Time:	Company:	Received By:	Date/Time:	

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

2.3/2.3 1.6/1.6 soil

2019-2020 Rainy Season
Version 4

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 011 Comp
"Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 ECI Project # 57013187"	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: michelle dallalah	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED												
									R	R	R	R	R	C							
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)		Total Dissolved Metals: Mercury (E245.1)	Total Dissolved Metals: (E200.8): Mn, Fe							Comments
(2) (3) (3) Outfall 011	3/23 Outfall011_20230321_Comp_F	3/21/2023 1420	WM	1L Poly	1	None	200	Yes	X					X							Filter and preserve w/in 24hrs of receipt at lab. Outfall 011 analyze for Mn and Fe.
			WM	borosilicate vials	2	None	320	No					X								Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
(1)	Outfall011_20230321_Comp	3/21/2023 1420	WM	500 mL Poly	1	NaOH	220	No		X											
			WM	2.5 Gal Cube	1	None	225	No			X										Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No													

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	3/22/23 15:57	H&A		3/22/23 1352 EC
Relinquished By	Date/Time:	Company:	Received By	Date/Time:
	3/22/23 1825	EC		3/22/23 18:25 EC
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212339.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132136-3
Address: 13715 Rider Trail North, ,	Due Date Requested: 4/24/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall - 011 Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	906.0/LSC_Dist_Susp Tritium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall011_20230322_Comp (570-132136-1)	3/21/23	14:20 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation. Ok to Preserve

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	03/23/23 15:55	EC		3/24/23 0910	ETSTL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132136-3

Login Number: 132136
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132136-3

Login Number: 132136
List Number: 3
Creator: Awalt, Jayna K

List Source: Eurofins St. Louis
List Creation: 03/24/23 06:52 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 1/18/2023 3:39:45 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 018 - GRAB

JOB NUMBER

570-122522-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

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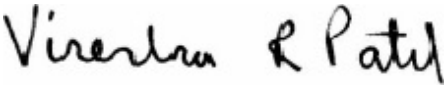
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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1/18/2023 3:39:45 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-122522-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc. Job ID: 570-122522-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Job ID: 570-122522-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-122522-1

Comments
No additional comments.

Receipt
The samples were received on 1/4/2023 5:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.9º C, 2.1º C, 2.3º C and 2.8º C.

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-293693. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 624.1: The method blank for analytical batch 570-293693 contained Methylene Chloride above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method SM 2540F: Insufficient sample volume was available to perform a sample duplicate (DUP) associated with analytical batch 570-293971.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-293939. 8015B_DRO. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-122522-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Client Sample ID: Outfall018_20230104_Grab
Lab Sample ID: 570-122522-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C13-C28	0.10		0.050	0.036	mg/L	1		8015B	Total/NA
HEM: Oil and Grease	1.3		1.0	0.51	mg/L	1		1664A	Total/NA
Specific Conductance	660		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA

Client Sample ID: TB-20230104
Lab Sample ID: 570-122522-3

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: Outfall018_20230104_Grab **Lab Sample ID: 570-122522-1**
Date Collected: 01/04/23 14:00 **Matrix: Water**
Date Received: 01/04/23 17:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			01/04/23 22:49	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			01/04/23 22:49	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			01/04/23 22:49	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			01/04/23 22:49	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/04/23 22:49	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			01/04/23 22:49	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/04/23 22:49	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			01/04/23 22:49	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			01/04/23 22:49	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			01/04/23 22:49	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			01/04/23 22:49	1
Acrolein	ND		5.0	4.6	ug/L			01/04/23 22:49	1
Acrylonitrile	ND		2.0	1.4	ug/L			01/04/23 22:49	1
Benzene	ND		0.50	0.28	ug/L			01/04/23 22:49	1
Bromoform	ND		1.0	0.25	ug/L			01/04/23 22:49	1
Bromomethane	ND		0.50	0.22	ug/L			01/04/23 22:49	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			01/04/23 22:49	1
Chlorobenzene	ND		0.50	0.19	ug/L			01/04/23 22:49	1
Dibromochloromethane	ND		0.50	0.15	ug/L			01/04/23 22:49	1
Chloroethane	ND		1.0	0.29	ug/L			01/04/23 22:49	1
Chloroform	ND		0.50	0.19	ug/L			01/04/23 22:49	1
Chloromethane	ND		0.50	0.30	ug/L			01/04/23 22:49	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			01/04/23 22:49	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			01/04/23 22:49	1
Bromodichloromethane	ND		0.50	0.19	ug/L			01/04/23 22:49	1
Ethylbenzene	ND		0.50	0.25	ug/L			01/04/23 22:49	1
Methylene Chloride	ND		2.0	0.57	ug/L			01/04/23 22:49	1
m,p-Xylene	ND		1.0	0.17	ug/L			01/04/23 22:49	1
Naphthalene	ND		1.0	0.33	ug/L			01/04/23 22:49	1
o-Xylene	ND		0.50	0.15	ug/L			01/04/23 22:49	1
Tetrachloroethene	ND		0.50	0.21	ug/L			01/04/23 22:49	1
Toluene	ND		0.50	0.23	ug/L			01/04/23 22:49	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			01/04/23 22:49	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			01/04/23 22:49	1
Trichloroethene	ND		0.50	0.17	ug/L			01/04/23 22:49	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			01/04/23 22:49	1
Vinyl chloride	ND		0.50	0.47	ug/L			01/04/23 22:49	1
Xylenes, Total	ND		1.0	0.17	ug/L			01/04/23 22:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			01/04/23 22:49	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			01/04/23 22:49	1
Cyclohexane	ND		2.0	0.79	ug/L			01/04/23 22:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*		*01/04/23 22:49*	*1*
Toluene-d8 (Surr)	*98*		*60 - 140*		*01/04/23 22:49*	*1*
Dibromofluoromethane (Surr)	*99*		*60 - 140*		*01/04/23 22:49*	*1*

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: TB-20230104
Date Collected: 01/04/23 14:00
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122522-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			01/04/23 22:27	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			01/04/23 22:27	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			01/04/23 22:27	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			01/04/23 22:27	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/04/23 22:27	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			01/04/23 22:27	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/04/23 22:27	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			01/04/23 22:27	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			01/04/23 22:27	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			01/04/23 22:27	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			01/04/23 22:27	1
Acrolein	ND		5.0	4.6	ug/L			01/04/23 22:27	1
Acrylonitrile	ND		2.0	1.4	ug/L			01/04/23 22:27	1
Benzene	ND		0.50	0.28	ug/L			01/04/23 22:27	1
Bromoform	ND		1.0	0.25	ug/L			01/04/23 22:27	1
Bromomethane	ND		0.50	0.22	ug/L			01/04/23 22:27	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			01/04/23 22:27	1
Chlorobenzene	ND		0.50	0.19	ug/L			01/04/23 22:27	1
Dibromochloromethane	ND		0.50	0.15	ug/L			01/04/23 22:27	1
Chloroethane	ND		1.0	0.29	ug/L			01/04/23 22:27	1
Chloroform	ND		0.50	0.19	ug/L			01/04/23 22:27	1
Chloromethane	ND		0.50	0.30	ug/L			01/04/23 22:27	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			01/04/23 22:27	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			01/04/23 22:27	1
Bromodichloromethane	ND		0.50	0.19	ug/L			01/04/23 22:27	1
Ethylbenzene	ND		0.50	0.25	ug/L			01/04/23 22:27	1
Methylene Chloride	ND		2.0	0.57	ug/L			01/04/23 22:27	1
m,p-Xylene	ND		1.0	0.17	ug/L			01/04/23 22:27	1
Naphthalene	ND		1.0	0.33	ug/L			01/04/23 22:27	1
o-Xylene	ND		0.50	0.15	ug/L			01/04/23 22:27	1
Tetrachloroethene	ND		0.50	0.21	ug/L			01/04/23 22:27	1
Toluene	ND		0.50	0.23	ug/L			01/04/23 22:27	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			01/04/23 22:27	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			01/04/23 22:27	1
Trichloroethene	ND		0.50	0.17	ug/L			01/04/23 22:27	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			01/04/23 22:27	1
Vinyl chloride	ND		0.50	0.47	ug/L			01/04/23 22:27	1
Xylenes, Total	ND		1.0	0.17	ug/L			01/04/23 22:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			01/04/23 22:27	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			01/04/23 22:27	1
Cyclohexane	ND		2.0	0.79	ug/L			01/04/23 22:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*60 - 140*		*01/04/23 22:27*	*1*
Toluene-d8 (Surr)	*102*		*60 - 140*		*01/04/23 22:27*	*1*
Dibromofluoromethane (Surr)	*99*		*60 - 140*		*01/04/23 22:27*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-122522-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Method: SW846 8015B - Gasoline Range Organics - (GC)

Client Sample ID: Outfall018_20230104_Grab
Lab Sample ID: 570-122522-1
Date Collected: 01/04/23 14:00
Matrix: Water
Date Received: 01/04/23 17:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	30	ug/L			01/05/23 14:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*72*		*20 - 144*		*01/05/23 14:54*	*1*

Method: SW846 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: Outfall018_20230104_Grab
Lab Sample ID: 570-122522-1
Date Collected: 01/04/23 14:00
Matrix: Water
Date Received: 01/04/23 17:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	0.10		0.050	0.036	mg/L		01/05/23 13:33	01/06/23 22:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*82*		*53 - 151*	*01/05/23 13:33*	*01/06/23 22:35*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-122522-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

General Chemistry

Client Sample ID: Outfall018_20230104_Grab
Lab Sample ID: 570-122522-1
Date Collected: 01/04/23 14:00
Matrix: Water
Date Received: 01/04/23 17:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM: Oil and Grease (1664A)	**1.3**		1.0	0.51	mg/L		01/05/23 12:06	01/06/23 12:42	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance (SM 2510B)	**660**		1.0	1.0	umhos/cm			01/10/23 17:52	1
Settleable Solids (SM 2540F)	ND		0.10	0.10	mL/L			01/05/23 16:11	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-122522-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)
570-122522-1	Outfall018_20230104_Grab	98	98	99
570-122522-3	TB-20230104	91	102	99
LCS 570-293693/1003	Lab Control Sample	100	101	101
LCSD 570-293693/4	Lab Control Sample Dup	98	99	104
MB 570-293693/6	Method Blank	98	101	99

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8015B - Gasoline Range Organics - (GC)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
		BFB1
Lab Sample ID	Client Sample ID	(20-144)
570-122504-D-3 MS	Matrix Spike	100
570-122504-D-3 MSD	Matrix Spike Duplicate	88
570-122522-1	Outfall018_20230104_Grab	72
LCS 570-293882/3	Lab Control Sample	114
LCSD 570-293882/4	Lab Control Sample Dup	114
MB 570-293882/5	Method Blank	75

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
		OTCSN1
Lab Sample ID	Client Sample ID	(53-151)
570-122522-1	Outfall018_20230104_Grab	82
LCS 570-293939/2-A	Lab Control Sample	102
LCSD 570-293939/3-A	Lab Control Sample Dup	96
MB 570-293939/1-A	Method Blank	99

Surrogate Legend

OTCSN = n-Octacosane (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-293693/6
Matrix: Water
Analysis Batch: 293693

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			01/04/23 17:55	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			01/04/23 17:55	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			01/04/23 17:55	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			01/04/23 17:55	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/04/23 17:55	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			01/04/23 17:55	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/04/23 17:55	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			01/04/23 17:55	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			01/04/23 17:55	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			01/04/23 17:55	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			01/04/23 17:55	1
Acrolein	ND		5.0	4.6	ug/L			01/04/23 17:55	1
Acrylonitrile	ND		2.0	1.4	ug/L			01/04/23 17:55	1
Benzene	ND		0.50	0.28	ug/L			01/04/23 17:55	1
Bromoform	ND		1.0	0.25	ug/L			01/04/23 17:55	1
Bromomethane	ND		0.50	0.22	ug/L			01/04/23 17:55	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			01/04/23 17:55	1
Chlorobenzene	ND		0.50	0.19	ug/L			01/04/23 17:55	1
Dibromochloromethane	ND		0.50	0.15	ug/L			01/04/23 17:55	1
Chloroethane	ND		1.0	0.29	ug/L			01/04/23 17:55	1
Chloroform	ND		0.50	0.19	ug/L			01/04/23 17:55	1
Chloromethane	ND		0.50	0.30	ug/L			01/04/23 17:55	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			01/04/23 17:55	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			01/04/23 17:55	1
Bromodichloromethane	ND		0.50	0.19	ug/L			01/04/23 17:55	1
Ethylbenzene	ND		0.50	0.25	ug/L			01/04/23 17:55	1
Methylene Chloride	0.686	J,DX	2.0	0.57	ug/L			01/04/23 17:55	1
m,p-Xylene	ND		1.0	0.17	ug/L			01/04/23 17:55	1
Naphthalene	ND		1.0	0.33	ug/L			01/04/23 17:55	1
o-Xylene	ND		0.50	0.15	ug/L			01/04/23 17:55	1
Tetrachloroethene	ND		0.50	0.21	ug/L			01/04/23 17:55	1
Toluene	ND		0.50	0.23	ug/L			01/04/23 17:55	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			01/04/23 17:55	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			01/04/23 17:55	1
Trichloroethene	ND		0.50	0.17	ug/L			01/04/23 17:55	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			01/04/23 17:55	1
Vinyl chloride	ND		0.50	0.47	ug/L			01/04/23 17:55	1
Xylenes, Total	ND		1.0	0.17	ug/L			01/04/23 17:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			01/04/23 17:55	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			01/04/23 17:55	1
Cyclohexane	ND		2.0	0.79	ug/L			01/04/23 17:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*		*01/04/23 17:55*	*1*
Toluene-d8 (Surr)	*101*		*60 - 140*		*01/04/23 17:55*	*1*
Dibromofluoromethane (Surr)	*99*		*60 - 140*		*01/04/23 17:55*	*1*

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-293693/1003
Matrix: Water
Analysis Batch: 293693

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	10.0	10.2		ug/L		102	70 - 130
1,1,2,2-Tetrachloroethane	10.0	11.4		ug/L		114	60 - 140
1,1,2-Trichloroethane	10.0	11.0		ug/L		110	70 - 130
1,1-Dichloroethane	10.0	10.7		ug/L		107	70 - 130
1,1-Dichloroethene	10.0	9.65		ug/L		97	50 - 150
1,2-Dichlorobenzene	10.0	11.1		ug/L		111	65 - 135
1,2-Dichloroethane	10.0	11.1		ug/L		111	70 - 130
1,2-Dichloropropane	10.0	10.8		ug/L		108	35 - 165
1,3-Dichlorobenzene	10.0	11.2		ug/L		112	70 - 130
1,4-Dichlorobenzene	10.0	10.8		ug/L		108	65 - 135
2-Chloroethyl vinyl ether	10.0	11.8		ug/L		118	1 - 225
Acrolein	20.0	15.1		ug/L		75	60 - 140
Acrylonitrile	100	117		ug/L		117	60 - 140
Benzene	10.0	10.8		ug/L		108	65 - 135
Bromoform	10.0	11.3		ug/L		113	70 - 130
Bromomethane	10.0	11.4		ug/L		114	15 - 185
Carbon tetrachloride	10.0	9.96		ug/L		100	70 - 130
Chlorobenzene	10.0	10.9		ug/L		109	65 - 135
Dibromochloromethane	10.0	10.9		ug/L		109	70 - 135
Chloroethane	10.0	9.37		ug/L		94	40 - 160
Chloroform	10.0	10.3		ug/L		103	70 - 135
Chloromethane	10.0	9.39		ug/L		94	1 - 205
cis-1,2-Dichloroethene	10.0	10.6		ug/L		106	60 - 140
cis-1,3-Dichloropropene	10.0	11.1		ug/L		111	25 - 175
Bromodichloromethane	10.0	11.1		ug/L		111	65 - 135
Ethylbenzene	10.0	11.1		ug/L		111	60 - 140
Methylene Chloride	10.0	10.2		ug/L		102	60 - 140
m,p-Xylene	10.0	11.0		ug/L		110	60 - 140
Naphthalene	10.0	12.3		ug/L		123	60 - 140
o-Xylene	10.0	11.0		ug/L		110	60 - 140
Tetrachloroethene	10.0	10.5		ug/L		105	70 - 130
Toluene	10.0	10.6		ug/L		106	70 - 130
trans-1,2-Dichloroethene	10.0	10.2		ug/L		102	70 - 130
trans-1,3-Dichloropropene	10.0	11.3		ug/L		113	50 - 150
Trichloroethene	10.0	10.8		ug/L		108	65 - 135
Trichlorofluoromethane	10.0	9.50		ug/L		95	50 - 150
Vinyl chloride	10.0	9.60		ug/L		96	5 - 195
Xylenes, Total	20.0	22.0		ug/L		110	60 - 140
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	8.60		ug/L		86	60 - 140
1,2-Dichloro-1,1,2-trifluoroethane	20.0	17.8		ug/L		89	60 - 140
Cyclohexane	10.0	8.39		ug/L		84	60 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*60 - 140*
Toluene-d8 (Surr)	*101*		*60 - 140*
Dibromofluoromethane (Surr)	*101*		*60 - 140*

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-293693/4
Matrix: Water
Analysis Batch: 293693

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane			10.0	11.0		ug/L		110	70 - 130	7	36
1,1,2,2-Tetrachloroethane			10.0	11.3		ug/L		113	60 - 140	1	61
1,1,2-Trichloroethane			10.0	11.4		ug/L		114	70 - 130	3	45
1,1-Dichloroethane			10.0	11.6		ug/L		116	70 - 130	8	40
1,1-Dichloroethene			10.0	10.4		ug/L		104	50 - 150	8	32
1,2-Dichlorobenzene			10.0	11.5		ug/L		115	65 - 135	4	57
1,2-Dichloroethane			10.0	11.0		ug/L		110	70 - 130	1	49
1,2-Dichloropropane			10.0	11.0		ug/L		110	35 - 165	2	55
1,3-Dichlorobenzene			10.0	11.4		ug/L		114	70 - 130	2	43
1,4-Dichlorobenzene			10.0	11.1		ug/L		111	65 - 135	3	57
2-Chloroethyl vinyl ether			10.0	11.5		ug/L		115	1 - 225	2	71
Acrolein			20.0	16.8		ug/L		84	60 - 140	11	60
Acrylonitrile			100	120		ug/L		120	60 - 140	3	60
Benzene			10.0	11.1		ug/L		111	65 - 135	3	61
Bromoform			10.0	11.5		ug/L		115	70 - 130	1	42
Bromomethane			10.0	10.8		ug/L		108	15 - 185	5	61
Carbon tetrachloride			10.0	10.6		ug/L		106	70 - 130	6	41
Chlorobenzene			10.0	11.1		ug/L		111	65 - 135	1	53
Dibromochloromethane			10.0	11.1		ug/L		111	70 - 135	2	50
Chloroethane			10.0	9.62		ug/L		96	40 - 160	3	78
Chloroform			10.0	11.1		ug/L		111	70 - 135	8	30
Chloromethane			10.0	10.0		ug/L		100	1 - 205	6	60
cis-1,2-Dichloroethene			10.0	11.8		ug/L		118	60 - 140	11	30
cis-1,3-Dichloropropene			10.0	11.2		ug/L		112	25 - 175	1	58
Bromodichloromethane			10.0	11.4		ug/L		114	65 - 135	3	56
Ethylbenzene			10.0	11.4		ug/L		114	60 - 140	3	63
Methylene Chloride			10.0	10.7		ug/L		107	60 - 140	5	28
m,p-Xylene			10.0	11.2		ug/L		112	60 - 140	2	30
Naphthalene			10.0	12.4		ug/L		124	60 - 140	1	30
o-Xylene			10.0	11.4		ug/L		114	60 - 140	4	30
Tetrachloroethene			10.0	10.8		ug/L		108	70 - 130	3	39
Toluene			10.0	11.1		ug/L		111	70 - 130	5	41
trans-1,2-Dichloroethene			10.0	10.9		ug/L		109	70 - 130	6	45
trans-1,3-Dichloropropene			10.0	11.9		ug/L		119	50 - 150	5	86
Trichloroethene			10.0	11.1		ug/L		111	65 - 135	2	48
Trichlorofluoromethane			10.0	9.88		ug/L		99	50 - 150	4	84
Vinyl chloride			10.0	10.5		ug/L		105	5 - 195	9	66
Xylenes, Total			20.0	22.6		ug/L		113	60 - 140	3	30
1,1,2-Trichloro-1,2,2-trifluoroethane			10.0	8.96		ug/L		90	60 - 140	4	30
1,2-Dichloro-1,1,2-trifluoroethane			20.0	19.2		ug/L		96	60 - 140	8	30
Cyclohexane			10.0	8.98		ug/L		90	60 - 140	7	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*
Toluene-d8 (Surr)	*99*		*60 - 140*
Dibromofluoromethane (Surr)	*104*		*60 - 140*

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 570-293882/5
Matrix: Water
Analysis Batch: 293882

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	30	ug/L			01/05/23 14:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*75*		*20 - 144*		*01/05/23 14:15*	*1*

Lab Sample ID: LCS 570-293882/3
Matrix: Water
Analysis Batch: 293882

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (C4-C13)			1920	2000		ug/L		104	71 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*114*		*20 - 144*

Lab Sample ID: LCSD 570-293882/4
Matrix: Water
Analysis Batch: 293882

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)			1920	2000		ug/L		104	71 - 120	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*114*		*20 - 144*

Lab Sample ID: 570-122504-D-3 MS
Matrix: Water
Analysis Batch: 293882

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (C4-C13)	ND		1920	1720		ug/L		90	54 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*20 - 144*

Lab Sample ID: 570-122504-D-3 MSD
Matrix: Water
Analysis Batch: 293882

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)	ND		1920	1690		ug/L		88	54 - 125	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*88*		*20 - 144*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 570-293939/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 293943
Prep Batch: 293939

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	ND		0.050	0.036	mg/L		01/05/23 13:33	01/05/23 16:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*99*		*53 - 151*	*01/05/23 13:33*	*01/05/23 16:36*	*1*

Lab Sample ID: LCS 570-293939/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 293943
Prep Batch: 293939

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
C10-C28	4.00	4.14		mg/L		103	65 - 129

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Octacosane (Surr)	*102*		*53 - 151*

Lab Sample ID: LCSD 570-293939/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 293943
Prep Batch: 293939

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28	4.00	3.84		mg/L		96	65 - 129	7	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Octacosane (Surr)	*96*		*53 - 151*

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-293908/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 294178
Prep Batch: 293908

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM: Oil and Grease	ND		1.0	0.51	mg/L		01/05/23 12:06	01/06/23 12:42	1

Lab Sample ID: LCS 570-293908/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 294178
Prep Batch: 293908

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM: Oil and Grease	40.0	36.6		mg/L		92	78 - 114

Lab Sample ID: LCSD 570-293908/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 294178
Prep Batch: 293908

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM: Oil and Grease	40.0	38.8		mg/L		97	78 - 114	6	18

Method: 1664A - HEM and SGT-HEM (Continued)

Lab Sample ID: 570-122538-A-1-A MS
Matrix: Water
Analysis Batch: 294178

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 293908

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
HEM: Oil and Grease	ND		45.5	45.7		mg/L		101	78 - 114

Lab Sample ID: 570-122538-A-1-B MSD
Matrix: Water
Analysis Batch: 294178

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 293908

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM: Oil and Grease	ND		43.8	44.1		mg/L		101	78 - 114	3	18

Lab Sample ID: 570-122549-A-1-A MS
Matrix: Water
Analysis Batch: 294178

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 293908

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
HEM: Oil and Grease	1.1	J,DX	51.3	49.7		mg/L		95	78 - 114

Lab Sample ID: 570-122549-A-1-B MSD
Matrix: Water
Analysis Batch: 294178

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 293908

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM: Oil and Grease	1.1	J,DX	43.8	42.7		mg/L		95	78 - 114	15	18

Lab Sample ID: 570-122551-A-1-A MS
Matrix: Water
Analysis Batch: 294178

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 293908

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
HEM: Oil and Grease	ND		45.5	43.2		mg/L		95	78 - 114

Lab Sample ID: 570-122551-A-1-B MSD
Matrix: Water
Analysis Batch: 294178

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 293908

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM: Oil and Grease	ND		44.9	40.7		mg/L		91	78 - 114	6	18

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-294917/38
Matrix: Water
Analysis Batch: 294917

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			01/10/23 16:17	1

Method: SM 2510B - Conductivity, Specific Conductance (Continued)

Lab Sample ID: 570-122417-B-1 DU
Matrix: Water
Analysis Batch: 294917

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Specific Conductance	ND			ND		umhos/cm				NC	25

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-122522-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

GC/MS VOA

Analysis Batch: 293693

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122522-1	Outfall018_20230104_Grab	Total/NA	Water	624.1	
570-122522-3	TB-20230104	Total/NA	Water	624.1	
MB 570-293693/6	Method Blank	Total/NA	Water	624.1	
LCS 570-293693/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-293693/4	Lab Control Sample Dup	Total/NA	Water	624.1	

GC VOA

Analysis Batch: 293882

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122522-1	Outfall018_20230104_Grab	Total/NA	Water	8015B	
MB 570-293882/5	Method Blank	Total/NA	Water	8015B	
LCS 570-293882/3	Lab Control Sample	Total/NA	Water	8015B	
LCSD 570-293882/4	Lab Control Sample Dup	Total/NA	Water	8015B	
570-122504-D-3 MS	Matrix Spike	Total/NA	Water	8015B	
570-122504-D-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B	

GC Semi VOA

Prep Batch: 293939

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122522-1	Outfall018_20230104_Grab	Total/NA	Water	3510C	
MB 570-293939/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-293939/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-293939/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 293943

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-293939/1-A	Method Blank	Total/NA	Water	8015B	293939
LCS 570-293939/2-A	Lab Control Sample	Total/NA	Water	8015B	293939
LCSD 570-293939/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	293939

Analysis Batch: 294222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122522-1	Outfall018_20230104_Grab	Total/NA	Water	8015B	293939

General Chemistry

Prep Batch: 293908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122522-1	Outfall018_20230104_Grab	Total/NA	Water	1664A	
MB 570-293908/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-293908/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-293908/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	
570-122538-A-1-A MS	Matrix Spike	Total/NA	Water	1664A	
570-122538-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	1664A	
570-122549-A-1-A MS	Matrix Spike	Total/NA	Water	1664A	
570-122549-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	1664A	
570-122551-A-1-A MS	Matrix Spike	Total/NA	Water	1664A	
570-122551-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	1664A	

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-122522-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

General Chemistry

Analysis Batch: 293971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122522-1	Outfall018_20230104_Grab	Total/NA	Water	SM 2540F	

Analysis Batch: 294178

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122522-1	Outfall018_20230104_Grab	Total/NA	Water	1664A	293908
MB 570-293908/1-A	Method Blank	Total/NA	Water	1664A	293908
LCS 570-293908/2-A	Lab Control Sample	Total/NA	Water	1664A	293908
LCSD 570-293908/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	293908
570-122538-A-1-A MS	Matrix Spike	Total/NA	Water	1664A	293908
570-122538-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	1664A	293908
570-122549-A-1-A MS	Matrix Spike	Total/NA	Water	1664A	293908
570-122549-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	1664A	293908
570-122551-A-1-A MS	Matrix Spike	Total/NA	Water	1664A	293908
570-122551-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	1664A	293908

Analysis Batch: 294917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122522-1	Outfall018_20230104_Grab	Total/NA	Water	SM 2510B	
MB 570-294917/38	Method Blank	Total/NA	Water	SM 2510B	
570-122417-B-1 DU	Duplicate	Total/NA	Water	SM 2510B	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-122522-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Client Sample ID: Outfall018_20230104_Grab
Lab Sample ID: 570-122522-1
Date Collected: 01/04/23 14:00
Matrix: Water
Date Received: 01/04/23 17:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	293693	01/04/23 22:49	N1A	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Analysis	8015B		1	5 mL	5 mL	293882	01/05/23 14:54	A1W	EET CAL 4
	Instrument ID: GC1									
Total/NA	Prep	3510C			249.4 mL	2.5 mL	293939	01/05/23 13:33	UFLU	EET CAL 4
Total/NA	Analysis	8015B		1	10 mL	10 mL	294222	01/06/23 22:35	A1W	EET CAL 4
	Instrument ID: GC50									
Total/NA	Prep	1664A			997 mL	1000 mL	293908	01/05/23 12:06	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			294178	01/06/23 12:42	USUL	EET CAL 4
	Instrument ID: NO EQUIQ									
Total/NA	Analysis	SM 2510B		1			294917	01/10/23 17:52	UAPD	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	293971	01/05/23 16:11	ZVB7	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB-20230104
Lab Sample ID: 570-122522-3
Date Collected: 01/04/23 14:00
Matrix: Water
Date Received: 01/04/23 17:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	293693	01/04/23 22:27	N1A	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-122522-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-12-22 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Job ID: 570-122522-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
8015B	Gasoline Range Organics - (GC)	SW846	EET CAL 4
8015B	Diesel Range Organics (DRO) (GC)	SW846	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAL 4
5030C	Purge and Trap	SW846	EET CAL 4

Protocol References:

1664A = EPA-821-98-002

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-122522-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-122522-1	Outfall018_20230104_Grab	Water	01/04/23 14:00	01/04/23 17:25
570-122522-3	TB-20230104	Water	01/04/23 14:00	01/04/23 17:25

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203259.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-122522-2
Address: 931 W. Barkley Ave, ,	Due Date Requested: 1/18/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 002 - GRAB	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify), Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall018_20230104_Grab (570-122522-1)	1/4/22	14:00 Pacific		Water			X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/4/23 1649	EC	Ricardo Corrales	1-4-23 @ 1649	Enthalpy Analytical
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:
		1.1°/ 27°

Ver: 06/08/2021

1/18/2023

Eurofins Calscience Ir

570-122522 Chain of Custody

CHAIN OF CUSTODY FORM

1ZZ___

Client Name/Address:	Project:
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 018 Grab
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler Adrian Mobeka	Field Manager Mark Dominick 978.234.5033, 818.599.0702 (cell)

Field Readings — Meter serial #: EDBPJ0UX

Field Readings: (Include units)
Time of Readings: 1400
DO 29.77 mg/L
pH 6.78 pH unit
Temp 56.0 C/°F
TRC ~~0.00~~ mg/L 0.00
Field readings QC
Checked by: [signature]
Date/Time: 1-4-2023/1400

ANALYSIS REQUIRED (A = MST-Bacteroidales, Human (SAM348-357) Source Molecular in Miami Lakes, FL; A = E. coli (SM9221) Enthalpy Analytical Orange, CA; R = Settleable Solids (E160.5 (SM2540F)); R = Conductivity (SM2510B / E120.1); R = Oil & Grease (E1664A-HEM); R/Q/A = VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624); A = VOCs - only A+A+2CVE (E624); A = TPH: gas (GRO(C4-C12)) (SW8015B); A = TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B))

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	MST-Bacteroidales (A)	E. coli (A)	Settleable Solids (R)	Conductivity (R)	Oil & Grease (R)	VOCs + VOCs PP... (R/Q/A)	VOCs - only A+A+2CVE (A)	TPH: gas (A)	TPH: diesel/jet fuel (A)	Comments
Outfall 018	Outfall018_20230104_Grab	1/4/2023 /1400	* WM	125mL Sterile Poly	1	None	5	No	X									Deliver to lab ASAP 8 hr hold time *
			WM	125mL Sterile Poly	3	$Na_2S_2O_3$	10	No		X								Deliver to lab ASAP 8 hr hold time Need 1x, 10x, 100x dilutions
			WM	1 L Glass Amber	2	HCl	15	No					X					
			WM	40 mL VOA	3	HCl	45	No						X				
			WM	40 mL VOA	3	None	55	No							X			
			WM	40 mL VOA	3	HCl	60	No								X		
			WM	1 L Glass Amber	2	None	65	No									X	
			WM	1 L Poly	1	None	70	No			X							
			WM	500 mL Poly	1	None	75	No				X						
	Outfall018_20230104_Grab_Extra	1/4/2023 /1400	WM	1 L Glass Amber	2	HCl	15	No					H					Hold
			WM	40 mL VOA	3	HCl	45	No						H				Hold
			WM	40 mL VOA	3	None	55	No							H			Hold
			WM	500 mL Poly	1	None	75	No				H						Hold
Trip Blanks	TB-20230104	1/4/2023 /1400	WQ	40 mL VOA	2	HCl	45	No						X				
			WQ	40 mL VOA	2	None	55	No							X			

Legend: A=Annual, R=Routine, Q=Quarterly

Relinquished By	Date/Time:	Company:	Received By	Date/Time:	
[signature]	1-4-2023/1440	H+A	[signature]	1/4/23 1440	EC
[signature]	1/4/23 1725	EC	[signature]	1/4/23 1725	

Turn-around time: (Check)
24 Hour ______ 72 Hour ______ 10 Day __X__
48 Hour ______ 5 Day ______ Normal: ______

Sample Integrity: (Check)
Intact: ______ On Ice: ______
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: ______ All Level IV: __X__

*Asterisked sample delivered seperately via FedEx to LuminUltra

2.8/2.8 2.1/2.1 2.3/2.3 1.9/1.9 Sc11

2019-2020 Rainy Season
Version 5

1/18/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122522-1

Login Number: 122522
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 1/21/2023 12:19:44 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 018 - GRAB

JOB NUMBER

570-122522-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Eurofins Calscience

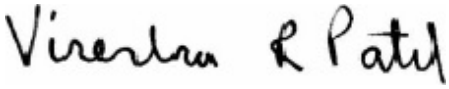
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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1/21/2023 12:19:44 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-122522-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-122522-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-122522-2

Comments
No additional comments.

Receipt
The samples were received on 1/4/2023 5:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.9º C, 2.1º C, 2.3º C and 2.8º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Quant-Tray - E. Coli - level 4 required - E. Coli - level 4 required: This method was subcontracted to Enthalpy Analytical - Barkley. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-122522-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Method	Method Description	Protocol	Laboratory
1103.1	E. Coli	EPA	Enthalpy

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Enthalpy = Enthalpy Analytical - Barkley, 931 W. Barkley Ave, Orange, CA 92868

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-122522-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-122522-1	Outfall018_20230104_Grab	Water	01/04/23 14:00	01/04/23 17:25

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 476539
Report Level: IV
Report Date: 01/19/2023

Microbiology Tests

Analytical Report *prepared for:*

Virendra Patel
Eurofins Calscience Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Project: BOEING NPDES SSFL - Boeing SSFL NPDES - Outfall 002 - Grab - #44024446

Authorized for release by:

Quynhgiao Le, Project Manager
714-7716900
quynhgiao.le@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

ENTHALPY ANALYTICAL

Sample Summary

Virendra Patel Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780	Lab Job #: Project No: Location: Date Received:	476539 BOEING NPDES SSFL Boeing SSFL NPDES - Outfall 002 - Grab - #44024446 01/04/23

Sample ID	Lab ID	Collected	Matrix
OUTFALL018_20230104_GRAB (570-122522-1)	476539-001	01/04/23 14:00	Water

ENTHALPY ANALYTICAL

Case Narrative

MICROBIOLOGY TESTS (SM 9223BB)

Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Virendra Patel	Lab Job Number:	476539
	Project No:	BOEING NPDES SSFL
	Location:	Boeing SSFL NPDES - Outfall 002 - Grab - #44024446
	Date Received:	01/04/23

This data package contains sample and QC results for one water sample, requested for the above referenced project on 01/04/23. See attached cooler receipt form for any sample receipt problems or discrepancies.

Chain of Custody

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

476539

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203259.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-122522-2
Address: 931 W. Barkley Ave, ,	Due Date Requested: 1/18/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 002 - GRAB	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall018_20230104_Grab (570-122522-1)	1/4/22	14:00 Pacific		Water			X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/4/23 1649	EC	Rosalio Corrales	1-4-23 @ 1649	Enthalpy Analytical
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
		1.1°/ 2.7°

Ver: 06/08/2021

1/21/2023

ICOC No:
570-203259

Containers

Count	Container Type	Preservative

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required - E. Coli - level 4 required)	E Coli (1x, 10x, 100x Dilutions) - 8 hour hold time - level 4

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: Eurofins Calscience

Project: Boeing SSFL NPDES - Outfall 002-Grab

Date Received: 01/04/2023

Sampler's Name Present: ☐ Yes ☑ No

Section 2

Sample(s) received in a cooler? ☑ Yes, How many? 1 ☐ No (skip section 2)

Sample Temp (°C) (No Cooler): _____

Sample Temp (°C), One from each cooler: #1: 2.7 #2: _____ #3: _____ #4: _____

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: _____

Section 3

Was the cooler packed with: ☑ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other _____

Cooler Temp (°C): #1: 1.1 #2: _____ #3: _____ #4: _____

Section 4	YES	NO	N/A
Was a COC received?	✔		
Are sample IDs present?	✔		
Are sampling dates & times present?	✔		
Is a relinquished signature present?	✔		
Are the tests required clearly indicated on the COC?	✔		
Are custody seals present?		✔	
If custody seals are present, were they intact?			✔
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)	✔		✔
Did all samples arrive intact? If no, indicate in Section 4 below.	✔		
Did all bottle labels agree with COC? (ID, dates and times)	✔		
Were the samples collected in the correct containers for the required tests?	✔		
Are the containers labeled with the correct preservatives?	✔		
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✔
Was a sufficient amount of sample submitted for the requested tests?	✔		

Section 5 Explanations/Comments

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: _____ Date/Time _____ ☐ Email (email sent to/on): _____ / _____

Project Manager's response:

Completed By: _____ Date: 1/4/23

Results & QC Summary

ENTHALPY ANALYTICAL

Total Coliform / E. coli by Quanti-Tray

Lab #: 476539 **Project#:** BOEING NPDES SSFL

Client: Eurofins Calscience Tustin **Location:** Boeing SSFL NPDES - Outfall 002 - ...

Field ID:	OUTFALL018_20230104_GRAB (570-122522-1)	**Batch#:**	304654	**Analyzed:**	01/05/23 15:27
Lab ID:	476539-001	**Sampled:**	01/04/23 14:00	**Prep:**	
Matrix:	Water	**Received:**	01/04/23	**Analysis:**	SM 9223Bb
DiIn Fac:	1.000	**Prepared:**	01/04/23 19:31	**Analyst:**	JAA

476539-001 Analyte	Result	RL	Units
Coliform, E. Coli	**1.0**	1.0	MPN/100ml

Legend

RL: Reporting Limit

SM 9223 B-b, Quanti-Tray

Prep Analyst: PS Prep Date/Time: 1/4/23 1931 QC Batch ID: 304654 Batch Page 1 of 1

Read Analyst: BT Read Date/Time 01/05/23 1527

Media Used (check one): ☐Colisure ☒Colilert 18 ☐Colilert 24 Media Lot #: EU396 Pipette Lot #: A103842 / A104117 / A103941

Monthly Quanti-tray Sealer Check: Did it Pass? ☒Yes ☐No Date of last check*: 1/3/23 * Quanti-Tray Sealer Check must be performed monthly

Bacti Bottle lot #: BU009V

Comparetor lot #: HU148

Total and E. coli: Incubator ID: M3 Incubator In, Temp/Time: 34.8 1954 Incubator Out, Temp/Time: 1527 34.9

Fecal Coliform: Water Bath ID: 1 Water Bath In, Temp/Time: 44.5 1954 Water Bath Out, Temp/Time: 1527 44.6

Client	Client Sample ID	Enthalpy Sample ID	Dilution Factor	Total Coliform Counts Large Wells	Total Coliform Counts Small Wells	MPN Table Value	Final Result, MPN	E. coli Counts Large Wells	E. coli Counts Small Wells	MPN Table Value	Final Result, MPN	Fecal Coliform Counts (Colilert 18 only) Large Wells	Fecal Coliform Counts (Colilert 18 only) Small Wells	MPN Table Value	Final Result, MPN	Comments
		476510-016	1x	48	33	501.2	500	1	0	1.0	1.0	2	0	2.0	2.0	CP-01
		↓ 018	↓	26	3	39.9	40	0	0	<1	<1	0	0	<1	<1	↓ 03
		476538-001	1x	49	21	345.4	360	1	0	1.0	1.0					OU-01
		↓	10x	19	1	24.6	250	0	0	<1	<10					↓
		↓	100x	1	0	1/6/23 4.1	100	0	0	<1	<100					
		476538-001	1x	49	48	>2419.6	>24000	48	17	238.2	240					BO-01
		↓	10x	49	47	2419.6	24000	19	1	24.6	250					↓
		↓	100x	48	10	178.9	18000	4	0	4.1	410					
						JA 1/6/23										

Quality Control	Culture ID													
Positive +/+ (E. Coli) PS 1/4/23	+/+ 12/31/22	49	48	>2419.6	>24000	49	48	>2419.6	>24000	49	48	>2419.6	>24000	
Positive +/- (K. Pneumonia)	↓	49	48	>2419.6	>24000	0	0	<1	<1	49	48	>2419.6	>24000	
Negative -/- (P. Aeruginosa)	↓	0	0	<1	<1	0	0	<1	<1	0	0	<1	<1	

Data Entered By: JA 1/6/23 Data Reviewed By:

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203259.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-122522-2
Address: 931 W. Barkley Ave, ,	Due Date Requested: 1/18/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 002 - GRAB	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall018_20230104_Grab (570-122522-1)	1/4/22	14:00 Pacific		Water			X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/4/23 1649	EC	Ricardo Corrales	1-4-23 @ 1649	Enthalpy Analytical
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:
		1.1°/ 27°

Ver: 06/08/2021

1/21/2023

1222

Eurofins Calscience Ir

570-122522 Chain of Custody

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 018 Grab
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

Field Readings — Meter serial #: EDBPJOUX

Field Readings: (Include units)
Time of Readings: 1400
DO 29.77 mg/L
pH 6.78 pH unit
Temp 56.0 C/°F
TRC ~~0.00~~ mg/L 0.00
Field readings QC
Checked by: [signature]
Date/Time: 1-4-2023/1400

ANALYSIS REQUIRED (Legend: A=Annual, R=Routine, Q=Quarterly)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	(A) MST-Bacteroidales, Human (SAM348-357) Source Molecular in Miami Lakes, FL *	(A) E. coli (SM9221) Enthalpy Analytical Orange, CA	(R) Settleable Solids (E160.5 (SM2540F))	(R) Conductivity (SM2510B / E120.1)	(R) Oil & Grease (E1664A-HEM)	(R/Q/A) VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	(A) VOCs - only A+A+2CVE (E624)	(A) TPH: gas (GRO(C4-C12)) (SW8015B)	(A) TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)			Comments
Outfall 018	Outfall018_20230104_Grab	1/4/2023 / 1400	* WM	125mL Sterile Poly	1	None	5	No	X											Deliver to lab ASAP 8 hr hold time *
			WM	125mL Sterile Poly	3	$Na_2S_2O_3$	10	No		X										Deliver to lab ASAP 8 hr hold time Need 1x, 10x, 100x dilutions
			WM	1 L Glass Amber	2	HCl	15	No					X							
			WM	40 mL VOA	3	HCl	45	No						X						
			WM	40 mL VOA	3	None	55	No							X					
			WM	40 mL VOA	3	HCl	60	No								X				
			WM	1 L Glass Amber	2	None	65	No									X			
			WM	1 L Poly	1	None	70	No			X									
			WM	500 mL Poly	1	None	75	No				X								
	Outfall018_20230104_Grab_Extra	1/4/2023 / 1400	WM	1 L Glass Amber	2	HCl	15	No					H							Hold
			WM	40 mL VOA	3	HCl	45	No						H						Hold
			WM	40 mL VOA	3	None	55	No							H					Hold
			WM	500 mL Poly	1	None	75	No				H								Hold
Trip Blanks	TB-20230104	1/4/2023 / 1400	WQ	40 mL VOA	2	HCl	45	No						X						
			WQ	40 mL VOA	2	None	55	No							X					

Legend: A=Annual, R=Routine, Q=Quarterly

Relinquished By	Date/Time:	Company:	Received By	Date/Time:	
[signature]	1-4-2023/1440	H&A	[signature]	1/4/23 1440	EC
[signature]	1/4/23 1725	EC	[signature]	1/4/23 1725	

Turn-around time: (Check)
24 Hour ______ 72 Hour ______ 10 Day __X__
48 Hour ______ 5 Day ______ Normal: ______

Sample Integrity: (Check)
Intact: ______ On Ice: ______
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: ______ All Level IV: __X__

* Asterisked sample delivered seperately via FedEx to LuminUltra

2.8/2.8 2.1/2.1 2.3/2.3 1.9/1.9 SCII

2019-2020 Rainy Season
Version 5

1/21/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122522-2

Login Number: 122522
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/24/2023 2:06:41 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 018 - GRAB

JOB NUMBER

570-122522-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

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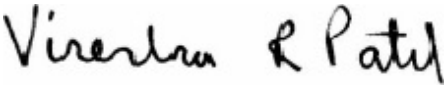
Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-122522-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-122522-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-122522-3

Receipt
The samples were received on 1/4/2023 5:25 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.9°C, 2.1°C, 2.3°C and 2.8°C

SUBCONTRACTING

The following analysis was subcontracted to Weck Laboratories, Inc.:
Weck 624.1 - 2-CEVE only (ug/L units) with MDLs (J)

Subcontract Lab non-Sister Lab
See attached subcontract report.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-122522-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Method	Method Description	Protocol	Laboratory
624	EPA 624 Purgeable Organic Compounds	EPA	Weck Lab

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Weck Lab = Weck Laboratories, Inc., 14859 East Clark Avenue, City of Industry, CA 917451396

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-122522-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-122522-2	Outfall018_20230104_Grab_Extra	Water	01/04/23 14:00	01/04/23 17:25

WECK LABORATORIES, INC.

Certificate of Analysis

FINAL REPORT

Work Orders: 3B02092

Project: 570-122522-3

Attn: Virendra Patel

Client: Eurofins Calscience - Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Report Date: 2/21/2023
Received Date: 2/2/2023
Turnaround Time: Normal
Phones: (949) 261-1022
Fax: (949) 260-3297
P.O. #:
Billing Code:

Dear Virendra Patel,

Enclosed are the results of analyses for samples received 2/02/23 with the Chain-of-Custody document. The samples were received in good condition, at 1.9 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: Outfall018_20230104_Grab_Extra (570-122522-2) — Sampled: 01/04/23 14:00 by Client

3B02092-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 624.1			**Instr:** GCMS21				
Batch ID: W3B0481 **Preparation:** EPA 5030B			**Prepared:** 02/07/23 06:54				**Analyst:** ADM
2-Chloroethyl vinyl ether	ND	0.19	1.0	ug/l	1	02/07/23	O-09
Surrogate(s)							
1,2-Dichloroethane-d4	*116%*		*82-125*	*Conc: 57.9*		*02/07/23*	
4-Bromofluorobenzene	*95%*		*88-108*	*Conc: 47.5*		*02/07/23*	
Toluene-d8	*98%*		*92-112*	*Conc: 49.2*		*02/07/23*	

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

Quality Control Results

Volatile Organic Compounds by P&T and GC/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3B0481-BLK1)					**Prepared & Analyzed: 02/07/23**						
2-Chloroethyl vinyl ether	ND	0.19	1.0	ug/l							
Surrogate(s)											
1,2-Dichloroethane-d4	*51.1*			*ug/l*	*50.0*		*102*	*82-125*			
4-Bromofluorobenzene	*49.0*			*ug/l*	*50.0*		*98*	*88-108*			
Toluene-d8	*48.5*			*ug/l*	*50.0*		*97*	*92-112*			
LCS (W3B0481-BS1)					**Prepared & Analyzed: 02/07/23**						
2-Chloroethyl vinyl ether	55.4	0.19	1.0	ug/l	50.0		111	0.1-305			
Surrogate(s)											
1,2-Dichloroethane-d4	*50.1*			*ug/l*	*50.0*		*100*	*82-125*			
4-Bromofluorobenzene	*48.2*			*ug/l*	*50.0*		*96*	*88-108*			
Toluene-d8	*52.1*			*ug/l*	*50.0*		*104*	*92-112*			
LCS Dup (W3B0481-BSD1)					**Prepared & Analyzed: 02/07/23**						
2-Chloroethyl vinyl ether	54.8	0.19	1.0	ug/l	50.0		110	0.1-305	1	25	
Surrogate(s)											
1,2-Dichloroethane-d4	*50.3*			*ug/l*	*50.0*		*101*	*82-125*			
4-Bromofluorobenzene	*52.4*			*ug/l*	*50.0*		*105*	*88-108*			
Toluene-d8	*49.2*			*ug/l*	*50.0*		*98*	*92-112*			

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634

Notes and Definitions

Item	Definition
O-09	This sample was received with the EPA recommended holding time expired.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Reviewed by:

Tiffany T. Felix For Rahul R. Nair
Project Manager

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

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www.wecklabs.com

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California	
Address: 14859 East Clark Avenue, ,	Due Date Requested: 2/22/2023	Analysis Requested	
City: City of Industry	TAT Requested (days):		
State, Zip: CA, 917451396			
Phone:	PO #:		
Email:	WO #:		
Project Name: Boeing SSFL NPDES - Outfall 018 - GRAB	Project #: 44024446		
Site:	SSOW#:		

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck 624.1 - 2-CEVE only (ug/L units) with MDLs (J))
			Preservation Code:				
Outfall018_20230104_Grab_Extra (570-122522-2)	1/4/23	14:00 Pacific		Water			X

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under cha maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accred attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are re
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time:	Company	Received by: Date/Time:

ICOC No:
570-206007

Containers

Count	Container Type	Preservative
3	Voa Vial 40ml - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
2	SUBCONTRACT	SUB (Weck 624.1 - 2-CEVE only (ug/L units) with MDLs (J))	Level IV, EQUIS 5C, MDL reporting w/J flag. Pe

COC	COC matches sample labels?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Receipt Information	Sample Temperature		1.9°C		
	Samples received on ice?	☒	☐		
	Ice Type (Blue/Wet)		WET		
	All samples intact?	☒	☐		
	Samples in proper containers?	☒	☐		
	Sufficient sample volume?	☒	☐		
	Samples intact?	☒	☐		
	Received within holding time?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Sample Preservation Verification?	Sample labels checked for correct preservation?	☒	☐	☐	
	VOC Headspace: (No) none, If Yes (See comment) 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☒	☐	☐ <6m
	pH verified upon receipt? Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 525.2<2; 6710B<2; 608.3 5-9	☐	☐	☒	pH paper Lot#
	Free Chlorine Tested <0.1	☐	☐	☒	Cl Test Strip Lo
	O&G pH <2 verified?	☐	☐	☐	pH paper Lot
	pH adjusted for O&G	☐	☐	☐	pH Reading: Acid Lot# Amt added:
	Project Manager notified?	☐	☐	☒	

08

PM Comments

Sample Receipt Checklist Prepared by:

Signature: *Lester Abad* Date: 02/02/23

12226

Eurofins Calscience Ir

570-122522 Chain of Custody

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 018 Grab
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

Field Readings — Meter serial #: EDBPJ0UX

Field Readings: (Include units)
Time of Readings: 1400
DO 29.77 mg/L
pH 6.78 pH unit
Temp 56.0 C/°F
TRC ~~0.00~~ mg/L 0.00
Field readings QC
Checked by: [signature]
Date/Time: 1-4-2023/1400

ANALYSIS REQUIRED

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	MST-Bacteroidales, Human (SAM348-357) Source Molecular in Miami Lakes, FL	E. coli (SM9221) Enthalpy Analytical Orange, CA	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	VOCs - only A+A+2CVE (E624)	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)			Comments
									A	A	R	R	R	R/Q/A	A	A	A			
Outfall 018	Outfall018_20230104_Grab	1/4/2023 /1400	* WM	125mL Sterile Poly	1	None	5	No	X											Deliver to lab ASAP 8 hr hold time *
			WM	125mL Sterile Poly	3	$Na_2S_2O_3$	10	No		X										Deliver to lab ASAP 8 hr hold time Need 1x, 10x, 100x dilutions
			WM	1 L Glass Amber	2	HCl	15	No					X							
			WM	40 mL VOA	3	HCl	45	No						X						
			WM	40 mL VOA	3	None	55	No							X					
			WM	40 mL VOA	3	HCl	60	No								X				
			WM	1 L Glass Amber	2	None	65	No									X			
			WM	1 L Poly	1	None	70	No			X									
			WM	500 mL Poly	1	None	75	No				X								
	Outfall018_20230104_Grab_Extra	1/4/2023 /1400	WM	1 L Glass Amber	2	HCl	15	No					H							Hold
			WM	40 mL VOA	3	HCl	45	No						H						Hold
			WM	40 mL VOA	3	None	55	No							H					Hold
			WM	500 mL Poly	1	None	75	No				H								Hold
Trip Blanks	TB-20230104	1/4/2023 /1400	WQ	40 mL VOA	2	HCl	45	No						X						
			WQ	40 mL VOA	2	None	55	No							X					

Legend: A=Annual, R=Routine, Q=Quarterly

Relinquished By	Date/Time:	Company:	Received By	Date/Time:	
[signature]	1-4-2023/1440	H+A	[signature]	1/4/23 1440	EC
[signature]	1/4/23 1725	EC	[signature]	1/4/23 1725	

Turn-around time: (Check)
24 Hour ______ 72 Hour ______ 10 Day __X__
48 Hour ______ 5 Day ______ Normal: ______

Sample Integrity: (Check)
Intact: ______ On Ice: ______
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: ______ All Level IV: __X__

*Asterisked sample delivered seperately via FedEx to LuminUltra

2.8/2.8 2.1/2.1 2.3/2.3 1.9/1.9 SC11

2019-2020 Rainy Season
Version 5

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122522-3

Login Number: 122522
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/4/2023 4:39:01 PM Revision 3

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 018 - COMP

JOB NUMBER

570-123038-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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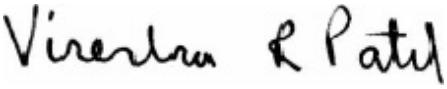

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Revision 3

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123038-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
BA	Relative percent difference out of control
LQ	LCS/LCSD recovery above method control limits

GC Semi VOA

Qualifier	Qualifier Description
BA	Relative percent difference out of control
LQ	LCS/LCSD recovery above method control limits
PI	Primary and confirm results varied by > than 40% RPD

HPLC/IC

Qualifier	Qualifier Description
BB	Sample > 4X spike concentration
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)
MB	Analyte present in the method blank

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123038-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123038-1

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 1/19/2023. The report (revision 3) is being revised due to: 200.8 dissolved revised to include Cobalt as part of the metals list.

Report revision history
Revision 1 - 2/14/2023 - Reason - Narrative revised to remove 200.7 comment for Zinc..

Revision 2 - 4/4/2023 - Reason - Narrative revised to remove 200.7 comment for Zinc..

Receipt
The samples were received on 1/6/2023 6:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.1º C.

GC/MS VOA
Method 8260B SIM: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-294255. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method 625.1 SIM: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 570-295604 and analytical batch 570-296124 recovered outside control limits for the following analytes: 4,6-Dinitro-2-methylphenol. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 625.1 SIM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 570-295604 and analytical batch 570-296124 recovered outside control limits for the following analytes: Benzidine.

Method 625.1 SIM: The continuing calibration verification (CCV) associated with batch 570-295532 recovered above the upper control limit for 4,6-Dinitro-2-methylphenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: Outfall018_20230106_Comp (570-123038-2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
Method 218.6:
The following samples to be analyzed for hexavalent chromium were filtered and buffered with ammonium sulfate solution per EPA Method 218.6 within 24 hours of collection. This extends the holding time to 28 days per the 2017 Clean Water Act Methods Update Rule, which supersedes preservation and holding time requirements in the analytical method.

Outfall018_20230106_Comp (570-123038-2)

<&commaMerge&>

Method 300.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 570-294335 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Sulfate in the

Job ID: 570-123038-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

MS/MSD was above the instrument calibration range. The data have been reported and qualified.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method 608.3: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 570-295632 and analytical batch 570-295932 recovered outside control limits for the following analytes: Aroclor 1016 and Aroclor 1260. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 608.3: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 570-295632 and analytical batch 570-295932 recovered outside control limits for the following analytes: Aroclor 1016 and Aroclor 1260. These analytes are biased high in the LCS and were not detected in the samples, therefore data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method 200.7 Rev 4.4: The method blank for preparation batch 570-295271 and analytical batch 570-296497 contained Zinc above the method detection limit. This target analyte concentration was less than the reporting limit (RL) or greater than 10X the value found in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method 200.8: The method blank for preparation batch 570-295281 and analytical batch 570-295467 contained Copper and Lead above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 200.8: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-295281 and analytical batch 570-295467 were outside control limits for Magnesium and Iron. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 200.8: The method blank for preparation batch 570-295281 and analytical batch 570-295467 contained Boron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: Outfall018_20230106_Comp_F (570-123038-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: Outfall018_20230106_Comp_F (570-123038-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 2540D: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for analytical batch 570-295140 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with

Job ID: 570-123038-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

preparation batch 570-295632. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. 608LL

Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-295604. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. 625.1

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Job ID: 570-123038-1

Client Sample ID: Outfall018_20230106_Comp_F — Lab Sample ID: 570-123038-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	50	J,DX BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Antimony	0.37	J,DX BU	2.0	0.36	ug/L	1		200.8	Dissolved
Copper	1.6	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Barium	32	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Nickel	1.0	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Vanadium	0.52	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Arsenic	0.26	J,DX BU	1.0	0.16	ug/L	1		200.8	Dissolved
Manganese	15	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Chromium	0.34	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Hardness as calcium carbonate	100		7.1	0.50	mg/L	1		SM 2340B	Dissolved

Client Sample ID: Outfall018_20230106_Comp — Lab Sample ID: 570-123038-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium, hexavalent	0.22		0.20	0.019	ug/L	1		218.6	Total/NA
Chloride	4.9		1.0	0.36	mg/L	1		300.0	Total/NA
Nitrite as N	0.097	J,DX	0.10	0.043	mg/L	1		300.0	Total/NA
Nitrate as N	0.92		0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate	150		5.0	1.2	mg/L	5		300.0	Total/NA
Nitrate Nitrite as N	1.0		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Boron	58	J,DX	500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Antimony	0.36	J,DX	2.0	0.36	ug/L	1		200.8	Total Recoverable
Copper	7.3	MB	2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	0.90	J,DX MB	1.0	0.12	ug/L	1		200.8	Total Recoverable
Barium	35		1.0	0.17	ug/L	1		200.8	Total Recoverable
Iron	22		20	3.7	ug/L	1		200.8	Total Recoverable
Nickel	1.1	J,DX	2.0	0.17	ug/L	1		200.8	Total Recoverable
Vanadium	0.51	J,DX	2.0	0.17	ug/L	1		200.8	Total Recoverable
Arsenic	0.26	J,DX	1.0	0.16	ug/L	1		200.8	Total Recoverable
Zinc	13	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Manganese	17		1.0	0.41	ug/L	1		200.8	Total Recoverable
Chromium	0.41	J,DX	2.0	0.14	ug/L	1		200.8	Total Recoverable
Hardness as calcium carbonate	100		7.1	0.50	mg/L	1		SM 2340B	Total Recoverable
Ammonia	0.064	J,DX	0.075	0.032	mg/L	1		350.1	Total/NA
Turbidity	0.55		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Dissolved Solids	290		10	8.7	mg/L	1		SM 2540C	Total/NA
Carbon, Total Organic	4.8		0.50	0.26	mg/L	1		SM 5310D	Total/NA
MBAS	0.090	J,DX	0.30	0.054	mg/L	1		SM 5540C	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method: SW846 8260B SIM - Volatile Organic Compounds (GC/MS)

Client Sample ID: Outfall018_20230106_Comp
Lab Sample ID: 570-123038-2
Date Collected: 01/06/23 10:15
Matrix: Water
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.55	ug/L			01/07/23 01:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorobutane (Surr)	*118*		*67 - 133*		*01/07/23 01:35*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: Outfall018_20230106_Comp
Date Collected: 01/06/23 10:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123038-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		0.19	0.12	ug/L		01/13/23 05:33	01/13/23 20:31	1
1,2-Dichlorobenzene	ND		0.19	0.11	ug/L		01/13/23 05:33	01/13/23 20:31	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.19	0.085	ug/L		01/13/23 05:33	01/13/23 20:31	1
1,3-Dichlorobenzene	ND		0.19	0.11	ug/L		01/13/23 05:33	01/13/23 20:31	1
1,4-Dichlorobenzene	ND		0.19	0.13	ug/L		01/13/23 05:33	01/13/23 20:31	1
2,4,6-Trichlorophenol	ND		0.94	0.13	ug/L		01/13/23 05:33	01/13/23 20:31	1
2,4-Dichlorophenol	ND		0.94	0.13	ug/L		01/13/23 05:33	01/13/23 20:31	1
2,4-Dimethylphenol	ND		0.19	0.12	ug/L		01/13/23 05:33	01/13/23 20:31	1
2,4-Dinitrophenol	ND		4.7	4.0	ug/L		01/13/23 05:33	01/13/23 20:31	1
2,4-Dinitrotoluene	ND		0.19	0.11	ug/L		01/13/23 05:33	01/13/23 20:31	1
2,6-Dinitrotoluene	ND		0.19	0.17	ug/L		01/13/23 05:33	01/13/23 20:31	1
2-Chloronaphthalene	ND		0.19	0.14	ug/L		01/13/23 05:33	01/13/23 20:31	1
2-Chlorophenol	ND		0.19	0.090	ug/L		01/13/23 05:33	01/13/23 20:31	1
2-Nitrophenol	ND		4.7	3.3	ug/L		01/13/23 05:33	01/13/23 20:31	1
3,3'-Dichlorobenzidine	ND		4.7	2.8	ug/L		01/13/23 05:33	01/13/23 20:31	1
4,6-Dinitro-2-methylphenol	ND	LQ	4.7	4.3	ug/L		01/13/23 05:33	01/13/23 20:31	1
4-Bromophenyl phenyl ether	ND		0.19	0.094	ug/L		01/13/23 05:33	01/13/23 20:31	1
4-Chloro-3-methylphenol	ND		0.94	0.12	ug/L		01/13/23 05:33	01/13/23 20:31	1
4-Chlorophenyl phenyl ether	ND		0.19	0.16	ug/L		01/13/23 05:33	01/13/23 20:31	1
4-Nitrophenol	ND		4.7	3.2	ug/L		01/13/23 05:33	01/13/23 20:31	1
Acenaphthene	ND		0.19	0.093	ug/L		01/13/23 05:33	01/13/23 20:31	1
Acenaphthylene	ND		0.19	0.12	ug/L		01/13/23 05:33	01/13/23 20:31	1
Anthracene	ND		0.19	0.079	ug/L		01/13/23 05:33	01/13/23 20:31	1
Benzidine	ND	BA	4.7	2.5	ug/L		01/13/23 05:33	01/13/23 20:31	1
Benzo[a]anthracene	ND		0.19	0.12	ug/L		01/13/23 05:33	01/13/23 20:31	1
Benzo[a]pyrene	ND		0.19	0.14	ug/L		01/13/23 05:33	01/13/23 20:31	1
Benzo[b]fluoranthene	ND		0.19	0.11	ug/L		01/13/23 05:33	01/13/23 20:31	1
Benzo[g,h,i]perylene	ND		0.19	0.10	ug/L		01/13/23 05:33	01/13/23 20:31	1
Benzo[k]fluoranthene	ND		0.19	0.11	ug/L		01/13/23 05:33	01/13/23 20:31	1
bis (2-chloroisopropyl) ether	ND		0.19	0.12	ug/L		01/13/23 05:33	01/13/23 20:31	1
Bis(2-chloroethoxy)methane	ND		0.19	0.099	ug/L		01/13/23 05:33	01/13/23 20:31	1
Bis(2-chloroethyl)ether	ND		0.19	0.098	ug/L		01/13/23 05:33	01/13/23 20:31	1
Bis(2-ethylhexyl) phthalate	ND		4.7	3.4	ug/L		01/13/23 05:33	01/13/23 20:31	1
Butyl benzyl phthalate	ND		0.94	0.63	ug/L		01/13/23 05:33	01/13/23 20:31	1
Chrysene	ND		0.19	0.11	ug/L		01/13/23 05:33	01/13/23 20:31	1
Dibenz(a,h)anthracene	ND		0.19	0.15	ug/L		01/13/23 05:33	01/13/23 20:31	1
Diethyl phthalate	ND		1.9	0.17	ug/L		01/13/23 05:33	01/13/23 20:31	1
Dimethyl phthalate	ND		1.9	0.092	ug/L		01/13/23 05:33	01/13/23 20:31	1
Di-n-butyl phthalate	ND		1.9	1.7	ug/L		01/13/23 05:33	01/13/23 20:31	1
Di-n-octyl phthalate	ND		2.8	0.50	ug/L		01/13/23 05:33	01/13/23 20:31	1
Fluoranthene	ND		0.19	0.095	ug/L		01/13/23 05:33	01/13/23 20:31	1
Fluorene	ND		0.19	0.089	ug/L		01/13/23 05:33	01/13/23 20:31	1
Hexachlorobenzene	ND		0.19	0.13	ug/L		01/13/23 05:33	01/13/23 20:31	1
Hexachlorobutadiene	ND		0.19	0.14	ug/L		01/13/23 05:33	01/13/23 20:31	1
Hexachlorocyclopentadiene	ND		0.19	0.14	ug/L		01/13/23 05:33	01/13/23 20:31	1
Hexachloroethane	ND		0.19	0.12	ug/L		01/13/23 05:33	01/13/23 20:31	1
Indeno[1,2,3-cd]pyrene	ND		0.19	0.12	ug/L		01/13/23 05:33	01/13/23 20:31	1
Isophorone	ND		0.19	0.093	ug/L		01/13/23 05:33	01/13/23 20:31	1
Naphthalene	ND		0.19	0.10	ug/L		01/13/23 05:33	01/13/23 20:31	1

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Client Sample ID: Outfall018_20230106_Comp
Lab Sample ID: 570-123038-2
Date Collected: 01/06/23 10:15
Matrix: Water
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrobenzene	ND		0.19	0.14	ug/L		01/13/23 05:33	01/13/23 20:31	1
N-Nitrosodimethylamine	ND		0.19	0.18	ug/L		01/13/23 05:33	01/13/23 20:31	1
N-Nitrosodi-n-propylamine	ND		0.19	0.14	ug/L		01/13/23 05:33	01/13/23 20:31	1
N-Nitrosodiphenylamine	ND		0.19	0.10	ug/L		01/13/23 05:33	01/13/23 20:31	1
Pentachlorophenol	ND		0.94	0.80	ug/L		01/13/23 05:33	01/13/23 20:31	1
Phenanthrene	ND		0.19	0.16	ug/L		01/13/23 05:33	01/13/23 20:31	1
Phenol	ND		0.94	0.49	ug/L		01/13/23 05:33	01/13/23 20:31	1
Pyrene	ND		0.19	0.081	ug/L		01/13/23 05:33	01/13/23 20:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*82*		*28 - 127*	*01/13/23 05:33*	*01/13/23 20:31*	*1*
2-Fluorobiphenyl (Surr)	*56*		*31 - 120*	*01/13/23 05:33*	*01/13/23 20:31*	*1*
2-Fluorophenol	*33*		*17 - 120*	*01/13/23 05:33*	*01/13/23 20:31*	*1*
Nitrobenzene-d5	*60*		*27 - 120*	*01/13/23 05:33*	*01/13/23 20:31*	*1*
Phenol-d6 (Surr)	*25*		*10 - 120*	*01/13/23 05:33*	*01/13/23 20:31*	*1*
p-Terphenyl-d14 (Surr)	*79*		*45 - 120*	*01/13/23 05:33*	*01/13/23 20:31*	*1*

Method: EPA 608.3 - Organochlorine Pesticides in Water

Client Sample ID: Outfall018_20230106_Comp
Date Collected: 01/06/23 10:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123038-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0033	0.0031	ug/L		01/13/23 08:26	01/16/23 15:26	1
alpha-BHC	ND		0.0013	0.0012	ug/L		01/13/23 08:26	01/16/23 15:26	1
beta-BHC	ND		0.0050	0.0039	ug/L		01/13/23 08:26	01/16/23 15:26	1
delta-BHC	ND		0.0033	0.0020	ug/L		01/13/23 08:26	01/16/23 15:26	1
gamma-BHC (Lindane)	ND		0.0013	0.00066	ug/L		01/13/23 08:26	01/16/23 15:26	1
Chlordane (technical)	ND		0.033	0.026	ug/L		01/13/23 08:26	01/16/23 15:26	1
4,4'-DDD	ND		0.0067	0.0044	ug/L		01/13/23 08:26	01/16/23 15:26	1
4,4'-DDE	ND		0.0033	0.0019	ug/L		01/13/23 08:26	01/16/23 15:26	1
4,4'-DDT	ND		0.0033	0.0016	ug/L		01/13/23 08:26	01/16/23 15:26	1
Dieldrin	ND		0.0033	0.0013	ug/L		01/13/23 08:26	01/16/23 15:26	1
Endosulfan I	ND		0.0013	0.0013	ug/L		01/13/23 08:26	01/16/23 15:26	1
Endosulfan II	ND		0.0067	0.0041	ug/L		01/13/23 08:26	01/16/23 15:26	1
Endosulfan sulfate	ND		0.0033	0.0014	ug/L		01/13/23 08:26	01/16/23 15:26	1
Endrin	ND		0.0033	0.0023	ug/L		01/13/23 08:26	01/16/23 15:26	1
Endrin aldehyde	ND		0.033	0.024	ug/L		01/13/23 08:26	01/16/23 15:26	1
Heptachlor	ND		0.0013	0.0012	ug/L		01/13/23 08:26	01/16/23 15:26	1
Heptachlor epoxide	ND		0.0067	0.0039	ug/L		01/13/23 08:26	01/16/23 15:26	1
Toxaphene	ND		0.067	0.054	ug/L		01/13/23 08:26	01/16/23 15:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*48*	*PI*	*20 - 139*	*01/13/23 08:26*	*01/16/23 15:26*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method: EPA 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Client Sample ID: Outfall018_20230106_Comp
Lab Sample ID: 570-123038-2
Date Collected: 01/06/23 10:15
Matrix: Water
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND	LQ BA	0.10	0.044	ug/L		01/13/23 08:26	01/14/23 14:37	1
Aroclor 1221	ND		0.10	0.044	ug/L		01/13/23 08:26	01/14/23 14:37	1
Aroclor 1232	ND		0.10	0.044	ug/L		01/13/23 08:26	01/14/23 14:37	1
Aroclor 1242	ND		0.10	0.044	ug/L		01/13/23 08:26	01/14/23 14:37	1
Aroclor 1248	ND		0.10	0.044	ug/L		01/13/23 08:26	01/14/23 14:37	1
Aroclor 1254	ND		0.10	0.052	ug/L		01/13/23 08:26	01/14/23 14:37	1
Aroclor 1260	ND	LQ BA	0.10	0.052	ug/L		01/13/23 08:26	01/14/23 14:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*60*		*20 - 154*	*01/13/23 08:26*	*01/14/23 14:37*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography)

Client Sample ID: Outfall018_20230106_Comp
Lab Sample ID: 570-123038-2
Date Collected: 01/06/23 10:15
Matrix: Water
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.22		0.20	0.019	ug/L			01/09/23 04:17	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: Outfall018_20230106_Comp
Lab Sample ID: 570-123038-2
Date Collected: 01/06/23 10:15
Matrix: Water
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.9**		1.0	0.36	mg/L			01/07/23 16:06	1
Nitrite as N	**0.097**	**J,DX**	0.10	0.043	mg/L			01/07/23 16:06	1
Fluoride	ND		0.10	0.046	mg/L			01/07/23 16:06	1
Nitrate as N	**0.92**		0.10	0.020	mg/L			01/07/23 16:06	1
Sulfate	**150**		5.0	1.2	mg/L			01/13/23 15:35	5

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: Outfall018_20230106_Comp
Lab Sample ID: 570-123038-2
Date Collected: 01/06/23 10:15
Matrix: Water
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/19/23 01:33	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: Outfall018_20230106_Comp
Lab Sample ID: 570-123038-2
Date Collected: 01/06/23 10:15
Matrix: Water
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	1.0		0.10	0.020	mg/L			01/16/23 15:37	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: Outfall018_20230106_Comp
Lab Sample ID: 570-123038-2
Date Collected: 01/06/23 10:15
Matrix: Water
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	58	J,DX	500	3.5	ug/L		01/12/23 06:20	01/17/23 13:44	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: Outfall018_20230106_Comp_F
Lab Sample ID: 570-123038-1
Date Collected: 01/06/23 10:15
Matrix: Water
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	50	J,DX BU	500	3.5	ug/L			01/11/23 09:36	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: Outfall018_20230106_Comp
Date Collected: 01/06/23 10:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123038-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.36**	**J,DX**	2.0	0.36	ug/L		01/12/23 00:28	01/12/23 12:48	1
Cadmium	ND		1.0	0.13	ug/L		01/12/23 00:28	01/12/23 12:48	1
Copper	**7.3**	**MB**	2.0	0.32	ug/L		01/12/23 00:28	01/12/23 12:48	1
Lead	**0.90**	**J,DX MB**	1.0	0.12	ug/L		01/12/23 00:28	01/12/23 12:48	1
Selenium	ND		2.0	0.52	ug/L		01/12/23 00:28	01/12/23 12:48	1
Silver	ND		1.0	0.23	ug/L		01/12/23 00:28	01/12/23 12:48	1
Thallium	ND		1.0	0.11	ug/L		01/12/23 00:28	01/12/23 12:48	1
Beryllium	ND		0.50	0.26	ug/L		01/12/23 00:28	01/12/23 12:48	1
Barium	**35**		1.0	0.17	ug/L		01/12/23 00:28	01/12/23 12:48	1
Iron	**22**		20	3.7	ug/L		01/12/23 00:28	01/12/23 12:48	1
Nickel	**1.1**	**J,DX**	2.0	0.17	ug/L		01/12/23 00:28	01/12/23 12:48	1
Vanadium	**0.51**	**J,DX**	2.0	0.17	ug/L		01/12/23 00:28	01/12/23 12:48	1
Arsenic	**0.26**	**J,DX**	1.0	0.16	ug/L		01/12/23 00:28	01/12/23 12:48	1
Zinc	**13**	**J,DX**	20	2.8	ug/L		01/12/23 00:28	01/12/23 12:48	1
Manganese	**17**		1.0	0.41	ug/L		01/12/23 00:28	01/12/23 12:48	1
Chromium	**0.41**	**J,DX**	2.0	0.14	ug/L		01/12/23 00:28	01/12/23 12:48	1
Cobalt	ND		1.0	0.14	ug/L		01/12/23 00:28	01/12/23 12:48	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: Outfall018_20230106_Comp_F
Lab Sample ID: 570-123038-1
Date Collected: 01/06/23 10:15
Matrix: Water
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.37**	**J,DX BU**	2.0	0.36	ug/L			01/10/23 12:13	1
Cadmium	ND	BU	1.0	0.13	ug/L			01/10/23 12:13	1
Copper	**1.6**	**J,DX BU**	2.0	0.32	ug/L			01/10/23 12:13	1
Lead	ND	BU	1.0	0.12	ug/L			01/10/23 12:13	1
Selenium	ND	BU	2.0	0.52	ug/L			01/10/23 12:13	1
Silver	ND	BU	1.0	0.23	ug/L			01/10/23 12:13	1
Thallium	ND	BU	1.0	0.11	ug/L			01/10/23 12:13	1
Barium	**32**	**BU**	1.0	0.17	ug/L			01/10/23 12:13	1
Iron	ND	BU	20	3.7	ug/L			01/10/23 12:13	1
Nickel	**1.0**	**J,DX BU**	2.0	0.17	ug/L			01/10/23 12:13	1
Vanadium	**0.52**	**J,DX BU**	2.0	0.17	ug/L			01/10/23 12:13	1
Arsenic	**0.26**	**J,DX BU**	1.0	0.16	ug/L			01/10/23 12:13	1
Zinc	ND	BU	20	2.8	ug/L			01/10/23 12:13	1
Manganese	**15**	**BU**	1.0	0.41	ug/L			01/10/23 12:13	1
Chromium	**0.34**	**J,DX BU**	2.0	0.14	ug/L			01/10/23 12:13	1
Beryllium	ND	BU	0.50	0.26	ug/L			01/10/23 12:13	1
Cobalt	ND	BU	1.0	0.14	ug/L			01/10/23 12:13	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: Outfall018_20230106_Comp
Lab Sample ID: 570-123038-2
Date Collected: 01/06/23 10:15
Matrix: Water
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		01/11/23 17:48	01/13/23 13:22	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: Outfall018_20230106_Comp_F
Lab Sample ID: 570-123038-1
Date Collected: 01/06/23 10:15
Matrix: Water
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	BU	0.20	0.12	ug/L		01/11/23 18:15	01/16/23 17:56	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Client Sample ID: Outfall018_20230106_Comp
Lab Sample ID: 570-123038-2
Date Collected: 01/06/23 10:15
Matrix: Water
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	100		7.1	0.50	mg/L			01/13/23 16:31	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Client Sample ID: Outfall018_20230106_Comp_F
Lab Sample ID: 570-123038-1
Date Collected: 01/06/23 10:15
Matrix: Water
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	100		7.1	0.50	mg/L			01/12/23 16:31	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

General Chemistry

Client Sample ID: Outfall018_20230106_Comp
Lab Sample ID: 570-123038-2
Date Collected: 01/06/23 10:15
Matrix: Water
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			01/16/23 11:45	1
Ammonia (EPA 350.1)	**0.064**	**J,DX**	0.075	0.032	mg/L		01/18/23 13:02	01/18/23 14:54	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			01/11/23 14:55	1
Turbidity (SM 2130B)	**0.55**		0.05	0.05	NTU			01/07/23 13:58	1
Total Dissolved Solids (SM 2540C)	**290**		10	8.7	mg/L			01/10/23 16:16	1
Total Suspended Solids (SM 2540D)	ND		2.0	1.7	mg/L			01/11/23 13:27	1
Carbon, Total Organic (SM 5310D)	**4.8**		0.50	0.26	mg/L			01/11/23 06:57	1
MBAS (SM 5540C)	**0.090**	**J,DX**	0.30	0.054	mg/L		01/07/23 09:00	01/07/23 10:39	1
Biochemical Oxygen Demand (SM5210B)	ND		2.0	1.0	mg/L			01/07/23 13:18	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Job ID: 570-123038-1

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	14DCBTN (67-133)
570-123038-2	Outfall018_20230106_Comp	118
LCS 570-294255/1012	Lab Control Sample	104
LCSD 570-294255/13	Lab Control Sample Dup	101
MB 570-294255/15	Method Blank	110

Surrogate Legend

14DCBTN = 1,4-Dichlorobutane (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	TBP (28-127)	FBP (31-120)	2FP (17-120)	NBZ (27-120)	PHL6 (10-120)	TPHd14 (45-120)
570-123038-2	Outfall018_20230106_Comp	82	56	33	60	25	79
LCS 570-295604/2-A	Lab Control Sample	84	63	45	63	33	86
LCSD 570-295604/3-A	Lab Control Sample Dup	86	66	44	62	32	78
MB 570-295604/1-A	Method Blank	79	59	43	68	30	68

Surrogate Legend

TBP = 2,4,6-Tribromophenol
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	TCX1 (20-139)
570-123038-2	Outfall018_20230106_Comp	48 PI
LCSD 570-295632/3-A	Lab Control Sample Dup	55 PI
MB 570-295632/1-A	Method Blank	59 PI

Surrogate Legend

TCX = Tetrachloro-m-xylene

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	TCX2 (20-139)
LCS 570-295632/2-A	Lab Control Sample	90

Surrogate Legend

TCX = Tetrachloro-m-xylene

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	DCB1 (20-154)								
570-123038-2	Outfall018_20230106_Comp	60								
LCS 570-295632/4-A	Lab Control Sample	70								
LCSD 570-295632/5-A	Lab Control Sample Dup	72								
MB 570-295632/1-A	Method Blank	62								

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-294255/15
Matrix: Water
Analysis Batch: 294255

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.55	ug/L			01/07/23 00:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorobutane (Surr)	*110*		*67 - 133*		*01/07/23 00:02*	*1*

Lab Sample ID: LCS 570-294255/1012
Matrix: Water
Analysis Batch: 294255

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane			20.0	19.0		ug/L		95	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,4-Dichlorobutane (Surr)	*104*		*67 - 133*

Lab Sample ID: LCSD 570-294255/13
Matrix: Water
Analysis Batch: 294255

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane			20.0	19.8		ug/L		99	75 - 120	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,4-Dichlorobutane (Surr)	*101*		*67 - 133*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-295604/1-A
Matrix: Water
Analysis Batch: 295532

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 295604

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		0.20	0.13	ug/L		01/13/23 05:33	01/13/23 17:44	1
1,2-Dichlorobenzene	ND		0.20	0.11	ug/L		01/13/23 05:33	01/13/23 17:44	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.20	0.091	ug/L		01/13/23 05:33	01/13/23 17:44	1
1,3-Dichlorobenzene	ND		0.20	0.12	ug/L		01/13/23 05:33	01/13/23 17:44	1
1,4-Dichlorobenzene	ND		0.20	0.14	ug/L		01/13/23 05:33	01/13/23 17:44	1
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		01/13/23 05:33	01/13/23 17:44	1
2,4-Dichlorophenol	ND		1.0	0.14	ug/L		01/13/23 05:33	01/13/23 17:44	1
2,4-Dimethylphenol	ND		0.20	0.13	ug/L		01/13/23 05:33	01/13/23 17:44	1
2,4-Dinitrophenol	ND		5.0	4.3	ug/L		01/13/23 05:33	01/13/23 17:44	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		01/13/23 05:33	01/13/23 17:44	1
2,6-Dinitrotoluene	ND		0.20	0.18	ug/L		01/13/23 05:33	01/13/23 17:44	1
2-Chloronaphthalene	ND		0.20	0.14	ug/L		01/13/23 05:33	01/13/23 17:44	1
2-Chlorophenol	ND		0.20	0.096	ug/L		01/13/23 05:33	01/13/23 17:44	1
2-Nitrophenol	ND		5.0	3.5	ug/L		01/13/23 05:33	01/13/23 17:44	1
3,3'-Dichlorobenzidine	ND		5.0	3.0	ug/L		01/13/23 05:33	01/13/23 17:44	1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: MB 570-295604/1-A
Matrix: Water
Analysis Batch: 295532

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 295604

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,6-Dinitro-2-methylphenol	ND		5.0	4.5	ug/L		01/13/23 05:33	01/13/23 17:44	1
4-Bromophenyl phenyl ether	ND		0.20	0.10	ug/L		01/13/23 05:33	01/13/23 17:44	1
4-Chloro-3-methylphenol	ND		1.0	0.13	ug/L		01/13/23 05:33	01/13/23 17:44	1
4-Chlorophenyl phenyl ether	ND		0.20	0.17	ug/L		01/13/23 05:33	01/13/23 17:44	1
4-Nitrophenol	ND		5.0	3.4	ug/L		01/13/23 05:33	01/13/23 17:44	1
Acenaphthene	ND		0.20	0.098	ug/L		01/13/23 05:33	01/13/23 17:44	1
Acenaphthylene	ND		0.20	0.13	ug/L		01/13/23 05:33	01/13/23 17:44	1
Anthracene	ND		0.20	0.084	ug/L		01/13/23 05:33	01/13/23 17:44	1
Benzidine	ND		5.0	2.7	ug/L		01/13/23 05:33	01/13/23 17:44	1
Benzo[a]anthracene	ND		0.20	0.12	ug/L		01/13/23 05:33	01/13/23 17:44	1
Benzo[a]pyrene	ND		0.20	0.15	ug/L		01/13/23 05:33	01/13/23 17:44	1
Benzo[b]fluoranthene	ND		0.20	0.11	ug/L		01/13/23 05:33	01/13/23 17:44	1
Benzo[g,h,i]perylene	ND		0.20	0.11	ug/L		01/13/23 05:33	01/13/23 17:44	1
Benzo[k]fluoranthene	ND		0.20	0.11	ug/L		01/13/23 05:33	01/13/23 17:44	1
bis (2-chloroisopropyl) ether	ND		0.20	0.13	ug/L		01/13/23 05:33	01/13/23 17:44	1
Bis(2-chloroethoxy)methane	ND		0.20	0.11	ug/L		01/13/23 05:33	01/13/23 17:44	1
Bis(2-chloroethyl)ether	ND		0.20	0.10	ug/L		01/13/23 05:33	01/13/23 17:44	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		01/13/23 05:33	01/13/23 17:44	1
Butyl benzyl phthalate	ND		1.0	0.67	ug/L		01/13/23 05:33	01/13/23 17:44	1
Chrysene	ND		0.20	0.11	ug/L		01/13/23 05:33	01/13/23 17:44	1
Dibenz(a,h)anthracene	ND		0.20	0.16	ug/L		01/13/23 05:33	01/13/23 17:44	1
Diethyl phthalate	ND		2.0	0.18	ug/L		01/13/23 05:33	01/13/23 17:44	1
Dimethyl phthalate	ND		2.0	0.098	ug/L		01/13/23 05:33	01/13/23 17:44	1
Di-n-butyl phthalate	ND		2.0	1.8	ug/L		01/13/23 05:33	01/13/23 17:44	1
Di-n-octyl phthalate	ND		3.0	0.54	ug/L		01/13/23 05:33	01/13/23 17:44	1
Fluoranthene	ND		0.20	0.10	ug/L		01/13/23 05:33	01/13/23 17:44	1
Fluorene	ND		0.20	0.095	ug/L		01/13/23 05:33	01/13/23 17:44	1
Hexachlorobenzene	ND		0.20	0.13	ug/L		01/13/23 05:33	01/13/23 17:44	1
Hexachlorobutadiene	ND		0.20	0.15	ug/L		01/13/23 05:33	01/13/23 17:44	1
Hexachlorocyclopentadiene	ND		0.20	0.15	ug/L		01/13/23 05:33	01/13/23 17:44	1
Hexachloroethane	ND		0.20	0.13	ug/L		01/13/23 05:33	01/13/23 17:44	1
Indeno[1,2,3-cd]pyrene	ND		0.20	0.13	ug/L		01/13/23 05:33	01/13/23 17:44	1
Isophorone	ND		0.20	0.099	ug/L		01/13/23 05:33	01/13/23 17:44	1
Naphthalene	ND		0.20	0.11	ug/L		01/13/23 05:33	01/13/23 17:44	1
Nitrobenzene	ND		0.20	0.14	ug/L		01/13/23 05:33	01/13/23 17:44	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		01/13/23 05:33	01/13/23 17:44	1
N-Nitrosodi-n-propylamine	ND		0.20	0.14	ug/L		01/13/23 05:33	01/13/23 17:44	1
N-Nitrosodiphenylamine	ND		0.20	0.11	ug/L		01/13/23 05:33	01/13/23 17:44	1
Pentachlorophenol	ND		1.0	0.84	ug/L		01/13/23 05:33	01/13/23 17:44	1
Phenanthrene	ND		0.20	0.16	ug/L		01/13/23 05:33	01/13/23 17:44	1
Phenol	ND		1.0	0.52	ug/L		01/13/23 05:33	01/13/23 17:44	1
Pyrene	ND		0.20	0.086	ug/L		01/13/23 05:33	01/13/23 17:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*79*		*28 - 127*	*01/13/23 05:33*	*01/13/23 17:44*	*1*
2-Fluorobiphenyl (Surr)	*59*		*31 - 120*	*01/13/23 05:33*	*01/13/23 17:44*	*1*
2-Fluorophenol	*43*		*17 - 120*	*01/13/23 05:33*	*01/13/23 17:44*	*1*
Nitrobenzene-d5	*68*		*27 - 120*	*01/13/23 05:33*	*01/13/23 17:44*	*1*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: MB 570-295604/1-A
Matrix: Water
Analysis Batch: 295532

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 295604

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Phenol-d6 (Surr)	*30*		*10 - 120*	*01/13/23 05:33*	*01/13/23 17:44*	*1*
p-Terphenyl-d14 (Surr)	*68*		*45 - 120*	*01/13/23 05:33*	*01/13/23 17:44*	*1*

Lab Sample ID: LCS 570-295604/2-A
Matrix: Water
Analysis Batch: 296124

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 295604

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4-Trichlorobenzene	20.0	11.4		ug/L		57	57 - 130
1,2-Dichlorobenzene	20.0	12.1		ug/L		60	40 - 120
1,2-Diphenylhydrazine(as Azobenzene)	20.0	13.9		ug/L		70	60 - 115
1,3-Dichlorobenzene	20.0	11.8		ug/L		59	37 - 120
1,4-Dichlorobenzene	20.0	11.7		ug/L		59	39 - 120
2,4,6-Trichlorophenol	20.0	17.0		ug/L		85	52 - 129
2,4-Dichlorophenol	20.0	15.0		ug/L		75	53 - 122
2,4-Dimethylphenol	20.0	14.6		ug/L		73	42 - 120
2,4-Dinitrophenol	20.0	26.0		ug/L		130	1 - 173
2,4-Dinitrotoluene	20.0	18.9		ug/L		95	48 - 127
2,6-Dinitrotoluene	20.0	18.9		ug/L		95	68 - 137
2-Chloronaphthalene	20.0	14.5		ug/L		72	65 - 120
2-Chlorophenol	20.0	15.5		ug/L		78	36 - 120
2-Nitrophenol	20.0	17.3		ug/L		87	45 - 167
3,3'-Dichlorobenzidine	20.0	16.3		ug/L		82	8 - 213
4,6-Dinitro-2-methylphenol	20.0	26.1		ug/L		130	53 - 130
4-Bromophenyl phenyl ether	20.0	15.6		ug/L		78	65 - 120
4-Chloro-3-methylphenol	20.0	17.0		ug/L		85	41 - 128
4-Chlorophenyl phenyl ether	20.0	15.7		ug/L		78	38 - 145
4-Nitrophenol	20.0	9.30		ug/L		46	13 - 129
Benzidine	20.0	5.62		ug/L		28	20 - 164
bis (2-chloroisopropyl) ether	20.0	16.0		ug/L		80	63 - 139
Bis(2-chloroethoxy)methane	20.0	14.8		ug/L		74	49 - 165
Bis(2-chloroethyl)ether	20.0	15.9		ug/L		80	43 - 126
Bis(2-ethylhexyl) phthalate	20.0	18.7		ug/L		93	29 - 137
Butyl benzyl phthalate	20.0	19.9		ug/L		99	1 - 140
Diethyl phthalate	20.0	16.8		ug/L		84	1 - 120
Dimethyl phthalate	20.0	16.6		ug/L		83	1 - 120
Di-n-butyl phthalate	20.0	16.5		ug/L		82	8 - 120
Di-n-octyl phthalate	20.0	18.9		ug/L		95	19 - 132
Hexachlorobenzene	20.0	16.3		ug/L		82	8 - 142
Hexachlorobutadiene	20.0	11.3		ug/L		57	38 - 120
Hexachlorocyclopentadiene	20.0	19.2		ug/L		96	43 - 145
Hexachloroethane	20.0	11.8		ug/L		59	55 - 120
Isophorone	20.0	14.1		ug/L		71	47 - 180
Nitrobenzene	20.0	13.2		ug/L		66	54 - 158
N-Nitrosodimethylamine	20.0	9.48		ug/L		47	20 - 120
N-Nitrosodi-n-propylamine	20.0	15.2		ug/L		76	14 - 198
N-Nitrosodiphenylamine	20.0	17.2		ug/L		86	65 - 133
Pentachlorophenol	20.0	16.3		ug/L		82	38 - 152

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-295604/2-A
Matrix: Water
Analysis Batch: 296124

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 295604

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Phenol			20.0	7.32		ug/L		37	17 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol	*84*		*28 - 127*
2-Fluorobiphenyl (Surr)	*63*		*31 - 120*
2-Fluorophenol	*45*		*17 - 120*
Nitrobenzene-d5	*63*		*27 - 120*
Phenol-d6 (Surr)	*33*		*10 - 120*
p-Terphenyl-d14 (Surr)	*86*		*45 - 120*

Lab Sample ID: LCSD 570-295604/3-A
Matrix: Water
Analysis Batch: 296124

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 295604

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene			20.0	11.3		ug/L		57	57 - 130	1	30
1,2-Dichlorobenzene			20.0	12.2		ug/L		61	40 - 120	1	20
1,2-Diphenylhydrazine(as Azobenzene)			20.0	14.5		ug/L		72	60 - 115	4	30
1,3-Dichlorobenzene			20.0	11.5		ug/L		58	37 - 120	3	20
1,4-Dichlorobenzene			20.0	11.6		ug/L		58	39 - 120	1	20
2,4,6-Trichlorophenol			20.0	17.1		ug/L		85	52 - 129	0	35
2,4-Dichlorophenol			20.0	15.1		ug/L		76	53 - 122	1	30
2,4-Dimethylphenol			20.0	14.5		ug/L		73	42 - 120	1	35
2,4-Dinitrophenol			20.0	27.6		ug/L		138	1 - 173	6	79
2,4-Dinitrotoluene			20.0	19.9		ug/L		99	48 - 127	5	25
2,6-Dinitrotoluene			20.0	19.6		ug/L		98	68 - 137	3	29
2-Chloronaphthalene			20.0	15.1		ug/L		76	65 - 120	4	15
2-Chlorophenol			20.0	14.7		ug/L		73	36 - 120	5	37
2-Nitrophenol			20.0	16.5		ug/L		83	45 - 167	5	33
3,3'-Dichlorobenzidine			20.0	17.0		ug/L		85	8 - 213	4	65
4,6-Dinitro-2-methylphenol			20.0	27.4	LQ	ug/L		137	53 - 130	5	122
4-Bromophenyl phenyl ether			20.0	15.6		ug/L		78	65 - 120	0	26
4-Chloro-3-methylphenol			20.0	16.4		ug/L		82	41 - 128	3	44
4-Chlorophenyl phenyl ether			20.0	16.3		ug/L		81	38 - 145	4	36
4-Nitrophenol			20.0	10.5		ug/L		53	13 - 129	12	79
Benzidine			20.0	9.78	BA	ug/L		49	20 - 164	54	30
bis (2-chloroisopropyl) ether			20.0	15.3		ug/L		76	63 - 139	5	46
Bis(2-chloroethoxy)methane			20.0	14.3		ug/L		71	49 - 165	4	32
Bis(2-chloroethyl)ether			20.0	14.7		ug/L		73	43 - 126	8	65
Bis(2-ethylhexyl) phthalate			20.0	19.3		ug/L		97	29 - 137	3	50
Butyl benzyl phthalate			20.0	19.8		ug/L		99	1 - 140	0	36
Diethyl phthalate			20.0	17.1		ug/L		85	1 - 120	1	60
Dimethyl phthalate			20.0	16.7		ug/L		83	1 - 120	1	110
Di-n-butyl phthalate			20.0	16.9		ug/L		85	8 - 120	3	28
Di-n-octyl phthalate			20.0	20.4		ug/L		102	19 - 132	8	42
Hexachlorobenzene			20.0	17.1		ug/L		85	8 - 142	5	33
Hexachlorobutadiene			20.0	10.8		ug/L		54	38 - 120	4	38
Hexachlorocyclopentadiene			20.0	20.1		ug/L		100	43 - 145	5	22

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-295604/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 296124 **Prep Batch: 295604**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexachloroethane			20.0	11.2		ug/L		56	55 - 120	5	32
Isophorone			20.0	13.9		ug/L		69	47 - 180	2	56
Nitrobenzene			20.0	12.8		ug/L		64	54 - 158	3	37
N-Nitrosodimethylamine			20.0	9.54		ug/L		48	20 - 120	1	21
N-Nitrosodi-n-propylamine			20.0	14.8		ug/L		74	14 - 198	3	52
N-Nitrosodiphenylamine			20.0	17.3		ug/L		86	65 - 133	0	20
Pentachlorophenol			20.0	16.8		ug/L		84	38 - 152	3	52
Phenol			20.0	6.93		ug/L		35	17 - 120	5	39

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol	*86*		*28 - 127*
2-Fluorobiphenyl (Surr)	*66*		*31 - 120*
2-Fluorophenol	*44*		*17 - 120*
Nitrobenzene-d5	*62*		*27 - 120*
Phenol-d6 (Surr)	*32*		*10 - 120*
p-Terphenyl-d14 (Surr)	*78*		*45 - 120*

Method: 608.3 - Organochlorine Pesticides in Water

Lab Sample ID: MB 570-295632/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 296152 **Prep Batch: 295632**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0033	0.0031	ug/L		01/13/23 08:26	01/16/23 15:12	1
alpha-BHC	ND		0.0013	0.0012	ug/L		01/13/23 08:26	01/16/23 15:12	1
beta-BHC	ND		0.0050	0.0039	ug/L		01/13/23 08:26	01/16/23 15:12	1
delta-BHC	ND		0.0033	0.0020	ug/L		01/13/23 08:26	01/16/23 15:12	1
gamma-BHC (Lindane)	ND		0.0013	0.00066	ug/L		01/13/23 08:26	01/16/23 15:12	1
Chlordane (technical)	ND		0.033	0.026	ug/L		01/13/23 08:26	01/16/23 15:12	1
4,4'-DDD	ND		0.0067	0.0044	ug/L		01/13/23 08:26	01/16/23 15:12	1
4,4'-DDE	ND		0.0033	0.0019	ug/L		01/13/23 08:26	01/16/23 15:12	1
4,4'-DDT	ND		0.0033	0.0016	ug/L		01/13/23 08:26	01/16/23 15:12	1
Dieldrin	ND		0.0033	0.0013	ug/L		01/13/23 08:26	01/16/23 15:12	1
Endosulfan I	ND		0.0013	0.0013	ug/L		01/13/23 08:26	01/16/23 15:12	1
Endosulfan II	ND		0.0067	0.0041	ug/L		01/13/23 08:26	01/16/23 15:12	1
Endosulfan sulfate	ND		0.0033	0.0014	ug/L		01/13/23 08:26	01/16/23 15:12	1
Endrin	ND		0.0033	0.0023	ug/L		01/13/23 08:26	01/16/23 15:12	1
Endrin aldehyde	ND		0.033	0.024	ug/L		01/13/23 08:26	01/16/23 15:12	1
Heptachlor	ND		0.0013	0.0012	ug/L		01/13/23 08:26	01/16/23 15:12	1
Heptachlor epoxide	ND		0.0067	0.0039	ug/L		01/13/23 08:26	01/16/23 15:12	1
Toxaphene	ND		0.067	0.054	ug/L		01/13/23 08:26	01/16/23 15:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*59*	*PI*	*20 - 139*	*01/13/23 08:26*	*01/16/23 15:12*	*1*

Method: 608.3 - Organochlorine Pesticides in Water (Continued)

Lab Sample ID: LCS 570-295632/2-A
Matrix: Water
Analysis Batch: 296152

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 295632

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Aldrin			0.0333	0.0222		ug/L		67	42 - 140		
alpha-BHC			0.0333	0.0233		ug/L		70	37 - 140		
beta-BHC			0.0333	0.0250	PI	ug/L		75	17 - 147		
delta-BHC			0.0333	0.0222	PI	ug/L		67	19 - 140		
gamma-BHC (Lindane)			0.0333	0.0243		ug/L		73	32 - 140		
4,4'-DDD			0.0333	0.0235	PI	ug/L		71	31 - 141		
4,4'-DDE			0.0333	0.0247		ug/L		74	30 - 145		
4,4'-DDT			0.0333	0.0226	PI	ug/L		68	25 - 160		
Dieldrin			0.0333	0.0227		ug/L		68	36 - 146		
Endosulfan I			0.0333	0.0206	PI	ug/L		62	45 - 153		
Endosulfan II			0.0333	0.0251		ug/L		75	1 - 202		
Endosulfan sulfate			0.0333	0.0456		ug/L		137	26 - 144		
Endrin			0.0333	0.0306		ug/L		92	30 - 147		
Endrin aldehyde			0.0333	ND		ug/L		59	50 - 135		
Heptachlor			0.0333	0.0214		ug/L		64	34 - 140		
Heptachlor epoxide			0.0333	0.0240		ug/L		72	37 - 142		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*90*		*20 - 139*

Lab Sample ID: LCSD 570-295632/3-A
Matrix: Water
Analysis Batch: 296152

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 295632

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aldrin			0.0333	0.0224		ug/L		67	42 - 140	1	35
alpha-BHC			0.0333	0.0226		ug/L		68	37 - 140	3	36
beta-BHC			0.0333	0.0256		ug/L		77	17 - 147	3	44
delta-BHC			0.0333	0.0226	PI	ug/L		68	19 - 140	2	52
gamma-BHC (Lindane)			0.0333	0.0271		ug/L		81	32 - 140	11	39
4,4'-DDD			0.0333	0.0246	PI	ug/L		74	31 - 141	4	39
4,4'-DDE			0.0333	0.0291		ug/L		87	30 - 145	16	35
4,4'-DDT			0.0333	0.0228	PI	ug/L		68	25 - 160	1	42
Dieldrin			0.0333	0.0234		ug/L		70	36 - 146	3	49
Endosulfan I			0.0333	0.0208	PI	ug/L		62	45 - 153	1	28
Endosulfan II			0.0333	0.0254		ug/L		76	1 - 202	1	53
Endosulfan sulfate			0.0333	0.0407		ug/L		122	26 - 144	11	38
Endrin			0.0333	0.0314		ug/L		94	30 - 147	3	48
Endrin aldehyde			0.0333	ND		ug/L		60	50 - 135	2	30
Heptachlor			0.0333	0.0276		ug/L		83	34 - 140	25	43
Heptachlor epoxide			0.0333	0.0237		ug/L		71	37 - 142	1	26

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*55*	*PI*	*20 - 139*

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 570-295632/1-A
Matrix: Water
Analysis Batch: 295932

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 295632

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.10	0.044	ug/L		01/13/23 08:26	01/14/23 18:08	1
Aroclor 1221	ND		0.10	0.044	ug/L		01/13/23 08:26	01/14/23 18:08	1
Aroclor 1232	ND		0.10	0.044	ug/L		01/13/23 08:26	01/14/23 18:08	1
Aroclor 1242	ND		0.10	0.044	ug/L		01/13/23 08:26	01/14/23 18:08	1
Aroclor 1248	ND		0.10	0.044	ug/L		01/13/23 08:26	01/14/23 18:08	1
Aroclor 1254	ND		0.10	0.052	ug/L		01/13/23 08:26	01/14/23 18:08	1
Aroclor 1260	ND		0.10	0.052	ug/L		01/13/23 08:26	01/14/23 18:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*62*		*20 - 154*	*01/13/23 08:26*	*01/14/23 18:08*	*1*

Lab Sample ID: LCS 570-295632/4-A
Matrix: Water
Analysis Batch: 295932

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 295632

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Aroclor 1016			0.133	0.152		ug/L		114	50 - 140		
Aroclor 1260			0.133	0.129		ug/L		97	8 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*70*		*20 - 154*

Lab Sample ID: LCSD 570-295632/5-A
Matrix: Water
Analysis Batch: 295932

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 295632

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aroclor 1016			0.133	0.401	LQ BA	ug/L		301	50 - 140	90	36
Aroclor 1260			0.133	0.195	LQ BA	ug/L		147	8 - 140	41	38

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*72*		*20 - 154*

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 570-294364/4
Matrix: Water
Analysis Batch: 294364

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		0.20	0.019	ug/L			01/09/23 03:42	1

Lab Sample ID: LCS 570-294364/5
Matrix: Water
Analysis Batch: 294364

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chromium, hexavalent			50.1	49.4		ug/L		99	95 - 107		

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography) (Continued)

Lab Sample ID: LCSD 570-294364/6
Matrix: Water
Analysis Batch: 294364

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chromium, hexavalent			50.1	49.7		ug/L		99	95 - 107	1	20

Lab Sample ID: 570-123038-2 MS
Matrix: Water
Analysis Batch: 294364

Client Sample ID: Outfall018_20230106_Comp
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chromium, hexavalent	0.22		50.1	50.3		ug/L		100	85 - 121

Lab Sample ID: 570-123038-2 MSD
Matrix: Water
Analysis Batch: 294364

Client Sample ID: Outfall018_20230106_Comp
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chromium, hexavalent	0.22		50.1	49.9		ug/L		99	85 - 121	1	25

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-294334/5
Matrix: Water
Analysis Batch: 294334

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			01/07/23 14:36	1
Nitrate as N	ND		0.10	0.020	mg/L			01/07/23 14:36	1

Lab Sample ID: LCS 570-294334/6
Matrix: Water
Analysis Batch: 294334

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N			2.50	2.52		mg/L		101	90 - 110
Nitrate as N			5.00	4.92		mg/L		98	90 - 110

Lab Sample ID: LCSD 570-294334/7
Matrix: Water
Analysis Batch: 294334

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N			2.50	2.50		mg/L		100	90 - 110	1	15
Nitrate as N			5.00	4.92		mg/L		98	90 - 110	0	15

Lab Sample ID: 570-123038-2 MS
Matrix: Water
Analysis Batch: 294334

Client Sample ID: Outfall018_20230106_Comp
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	0.097	J,DX	2.50	2.58		mg/L		99	80 - 120
Nitrate as N	0.92		5.00	6.05		mg/L		103	80 - 120

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 570-123038-2 MSD — **Client Sample ID: Outfall018_20230106_Comp**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 294334

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	0.097	J,DX	2.50	2.57		mg/L		99	80 - 120	0	20
Nitrate as N	0.92		5.00	6.04		mg/L		102	80 - 120	0	20

Lab Sample ID: MB 570-294335/5 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 294335

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			01/07/23 14:36	1
Fluoride	ND		0.10	0.046	mg/L			01/07/23 14:36	1
Sulfate	ND		1.0	0.24	mg/L			01/07/23 14:36	1

Lab Sample ID: LCS 570-294335/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 294335

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	49.7		mg/L		99	90 - 110
Fluoride	2.50	2.40		mg/L		96	90 - 110

Lab Sample ID: LCSD 570-294335/7 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 294335

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	49.8		mg/L		100	90 - 110	0	15
Fluoride	2.50	2.43		mg/L		97	90 - 110	1	15

Lab Sample ID: 570-123038-2 MS — **Client Sample ID: Outfall018_20230106_Comp**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 294335

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	4.9		50.0	57.3		mg/L		105	80 - 120
Fluoride	ND		2.50	2.51		mg/L		101	80 - 120

Lab Sample ID: 570-123038-2 MSD — **Client Sample ID: Outfall018_20230106_Comp**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 294335

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	4.9		50.0	57.3		mg/L		105	80 - 120	0	20
Fluoride	ND		2.50	2.52		mg/L		101	80 - 120	0	20

Lab Sample ID: MB 570-295613/5 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 295613

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			01/13/23 08:50	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 570-295613/5
Matrix: Water
Analysis Batch: 295613

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.10	0.046	mg/L			01/13/23 08:50	1
Sulfate	ND		1.0	0.24	mg/L			01/13/23 08:50	1

Lab Sample ID: LCS 570-295613/6
Matrix: Water
Analysis Batch: 295613

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	48.6		mg/L		97	90 - 110
Fluoride	2.50	2.64		mg/L		106	90 - 110
Sulfate	50.0	48.8		mg/L		98	90 - 110

Lab Sample ID: LCSD 570-295613/7
Matrix: Water
Analysis Batch: 295613

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	48.6		mg/L		97	90 - 110	0	15
Fluoride	2.50	2.61		mg/L		104	90 - 110	1	15
Sulfate	50.0	48.8		mg/L		98	90 - 110	0	15

Lab Sample ID: 570-123909-E-1 MS
Matrix: Water
Analysis Batch: 295613

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	350		50.0	407	BB	mg/L		118	80 - 120

Lab Sample ID: 570-123909-E-1 MSD
Matrix: Water
Analysis Batch: 295613

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	350		50.0	407	BB	mg/L		119	80 - 120	0	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-296687/14
Matrix: Water
Analysis Batch: 296687

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/18/23 16:30	1

Lab Sample ID: LCS 570-296687/15
Matrix: Water
Analysis Batch: 296687

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	23.9		ug/L		95	85 - 115

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: LCSD 570-296687/16
Matrix: Water
Analysis Batch: 296687

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	24.2		ug/L		97	85 - 115	1	15

Lab Sample ID: 570-124106-K-3 MS
Matrix: Water
Analysis Batch: 296687

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	ND		50.0	49.5		ug/L		99	80 - 120		

Lab Sample ID: 570-124106-K-3 MSD
Matrix: Water
Analysis Batch: 296687

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	ND		50.0	49.3		ug/L		99	80 - 120	1	15

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-295271/1-A
Matrix: Water
Analysis Batch: 296497

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 295271

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L		01/12/23 06:20	01/17/23 12:21	1

Lab Sample ID: LCS 570-295271/2-A
Matrix: Water
Analysis Batch: 296497

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 295271

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			500	499	J,DX	ug/L		100	85 - 115		

Lab Sample ID: LCSD 570-295271/3-A
Matrix: Water
Analysis Batch: 296497

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 295271

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	498	J,DX	ug/L		100	85 - 115	0	20

Lab Sample ID: 570-123346-A-1-C MS
Matrix: Water
Analysis Batch: 296497

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 295271

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron	28	J,DX	500	531		ug/L		101	80 - 120		

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 570-123346-A-1-D MSD
Matrix: Water
Analysis Batch: 296497

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 295271

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	28	J,DX	500	524		ug/L		99	80 - 120	1	20

Lab Sample ID: MB 570-294801/1-A
Matrix: Water
Analysis Batch: 295098

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L			01/11/23 09:15	1

Lab Sample ID: LCS 570-294801/2-A
Matrix: Water
Analysis Batch: 295098

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	500	475	J,DX	ug/L		95	85 - 115

Lab Sample ID: LCSD 570-294801/3-A
Matrix: Water
Analysis Batch: 295098

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	500	453	J,DX	ug/L		91	85 - 115	5	20

Lab Sample ID: 570-122945-H-2-E MS
Matrix: Water
Analysis Batch: 295098

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	78	J,DX	500	532		ug/L		91	80 - 120

Lab Sample ID: 570-122945-H-2-F MSD
Matrix: Water
Analysis Batch: 295098

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	78	J,DX	500	549		ug/L		94	80 - 120	3	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-295281/1-A
Matrix: Water
Analysis Batch: 295467

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 295281

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0	0.36	ug/L		01/12/23 00:28	01/12/23 12:28	1
Cadmium	ND		1.0	0.13	ug/L		01/12/23 00:28	01/12/23 12:28	1
Copper	0.329	J,DX	2.0	0.32	ug/L		01/12/23 00:28	01/12/23 12:28	1
Lead	0.510	J,DX	1.0	0.12	ug/L		01/12/23 00:28	01/12/23 12:28	1
Selenium	ND		2.0	0.52	ug/L		01/12/23 00:28	01/12/23 12:28	1
Silver	ND		1.0	0.23	ug/L		01/12/23 00:28	01/12/23 12:28	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-295281/1-A
Matrix: Water
Analysis Batch: 295467

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 295281

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	ND		1.0	0.11	ug/L		01/12/23 00:28	01/12/23 12:28	1
Barium	ND		1.0	0.17	ug/L		01/12/23 00:28	01/12/23 12:28	1
Iron	ND		20	3.7	ug/L		01/12/23 00:28	01/12/23 12:28	1
Nickel	ND		2.0	0.17	ug/L		01/12/23 00:28	01/12/23 12:28	1
Vanadium	ND		2.0	0.17	ug/L		01/12/23 00:28	01/12/23 12:28	1
Arsenic	ND		1.0	0.16	ug/L		01/12/23 00:28	01/12/23 12:28	1
Zinc	ND		20	2.8	ug/L		01/12/23 00:28	01/12/23 12:28	1
Manganese	ND		1.0	0.41	ug/L		01/12/23 00:28	01/12/23 12:28	1
Chromium	ND		2.0	0.14	ug/L		01/12/23 00:28	01/12/23 12:28	1
Beryllium	ND		0.50	0.26	ug/L		01/12/23 00:28	01/12/23 12:28	1
Cobalt	ND		1.0	0.14	ug/L		01/12/23 00:28	01/12/23 12:28	1

Lab Sample ID: LCS 570-295281/2-A
Matrix: Water
Analysis Batch: 295467

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 295281

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	80.0	84.1		ug/L		105	85 - 115
Cadmium	80.0	84.7		ug/L		106	85 - 115
Copper	80.0	81.9		ug/L		102	85 - 115
Lead	80.0	82.2		ug/L		103	85 - 115
Selenium	80.0	84.6		ug/L		106	85 - 115
Silver	80.0	82.0		ug/L		103	85 - 115
Thallium	80.0	84.6		ug/L		106	85 - 115
Barium	80.0	83.4		ug/L		104	85 - 115
Iron	800	831		ug/L		104	85 - 115
Nickel	80.0	81.9		ug/L		102	85 - 115
Vanadium	80.0	82.7		ug/L		103	85 - 115
Arsenic	80.0	83.5		ug/L		104	85 - 115
Zinc	80.0	83.6		ug/L		104	85 - 115
Manganese	80.0	84.1		ug/L		105	85 - 115
Chromium	80.0	82.7		ug/L		103	85 - 115
Beryllium	80.0	89.5		ug/L		112	85 - 115
Cobalt	80.0	83.1		ug/L		104	85 - 115

Lab Sample ID: LCSD 570-295281/3-A
Matrix: Water
Analysis Batch: 295467

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 295281

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	80.0	86.1		ug/L		108	85 - 115	2	20
Cadmium	80.0	85.5		ug/L		107	85 - 115	1	20
Copper	80.0	85.8		ug/L		107	85 - 115	5	20
Lead	80.0	81.9		ug/L		102	85 - 115	0	20
Selenium	80.0	84.4		ug/L		105	85 - 115	0	20
Silver	80.0	82.2		ug/L		103	85 - 115	0	20
Thallium	80.0	83.8		ug/L		105	85 - 115	1	20
Barium	80.0	83.9		ug/L		105	85 - 115	1	20
Iron	800	835		ug/L		104	85 - 115	0	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-295281/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total Recoverable
Analysis Batch: 295467
Prep Batch: 295281

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nickel			80.0	82.6		ug/L		103	85 - 115	1	20
Vanadium			80.0	83.4		ug/L		104	85 - 115	1	20
Arsenic			80.0	82.8		ug/L		103	85 - 115	1	20
Zinc			80.0	86.3		ug/L		108	85 - 115	3	20
Manganese			80.0	84.0		ug/L		105	85 - 115	0	20
Chromium			80.0	83.8		ug/L		105	85 - 115	1	20
Beryllium			80.0	89.0		ug/L		111	85 - 115	1	20
Cobalt			80.0	83.7		ug/L		105	85 - 115	1	20

Lab Sample ID: 570-122995-B-7-B MS
Client Sample ID: Matrix Spike
Matrix: Water
Prep Type: Total Recoverable
Analysis Batch: 295467
Prep Batch: 295281

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.56	J,DX	80.0	76.9		ug/L		95	80 - 120
Cadmium	ND		80.0	84.8		ug/L		106	80 - 120
Copper	7.2	MB	80.0	87.7		ug/L		101	80 - 120
Lead	5.5	MB	80.0	86.8		ug/L		102	80 - 120
Selenium	ND		80.0	78.2		ug/L		98	80 - 120
Silver	ND		80.0	81.2		ug/L		101	80 - 120
Thallium	ND		80.0	83.2		ug/L		104	80 - 120
Barium	49		80.0	135		ug/L		107	80 - 120
Iron	2700		800	4200	LM	ug/L		184	80 - 120
Nickel	4.6		80.0	85.1		ug/L		101	80 - 120
Vanadium	7.6		80.0	90.3		ug/L		103	80 - 120
Arsenic	1.1		80.0	80.0		ug/L		99	80 - 120
Zinc	19	J,DX	80.0	98.6		ug/L		100	80 - 120
Manganese	92		80.0	190	LM	ug/L		122	80 - 120
Chromium	4.2		80.0	86.1		ug/L		102	80 - 120
Beryllium	ND		80.0	86.3		ug/L		108	80 - 120
Cobalt	1.6		80.0	84.0		ug/L		103	80 - 120

Lab Sample ID: 570-122995-B-7-C MSD
Client Sample ID: Matrix Spike Duplicate
Matrix: Water
Prep Type: Total Recoverable
Analysis Batch: 295467
Prep Batch: 295281

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	0.56	J,DX	80.0	75.9		ug/L		94	80 - 120	1	20
Cadmium	ND		80.0	84.0		ug/L		105	80 - 120	1	20
Copper	7.2	MB	80.0	86.2		ug/L		99	80 - 120	2	20
Lead	5.5	MB	80.0	85.5		ug/L		100	80 - 120	1	20
Selenium	ND		80.0	77.8		ug/L		97	80 - 120	1	20
Silver	ND		80.0	81.2		ug/L		102	80 - 120	0	20
Thallium	ND		80.0	81.6		ug/L		102	80 - 120	2	20
Barium	49		80.0	133		ug/L		105	80 - 120	1	20
Iron	2700		800	4130	LM	ug/L		175	80 - 120	2	20
Nickel	4.6		80.0	83.8		ug/L		99	80 - 120	2	20
Vanadium	7.6		80.0	88.4		ug/L		101	80 - 120	2	20
Arsenic	1.1		80.0	79.3		ug/L		98	80 - 120	1	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-122995-B-7-C MSD
Matrix: Water
Analysis Batch: 295467

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 295281

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Zinc	19	J,DX	80.0	101		ug/L		103	80 - 120	2	20
Manganese	92		80.0	185		ug/L		116	80 - 120	3	20
Chromium	4.2		80.0	84.7		ug/L		101	80 - 120	2	20
Beryllium	ND		80.0	84.8		ug/L		106	80 - 120	2	20
Cobalt	1.6		80.0	82.0		ug/L		100	80 - 120	2	20

Lab Sample ID: MB 570-294776/1-A
Matrix: Water
Analysis Batch: 294822

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0	0.36	ug/L			01/10/23 12:07	1
Cadmium	ND		1.0	0.13	ug/L			01/10/23 12:07	1
Copper	ND		2.0	0.32	ug/L			01/10/23 12:07	1
Lead	ND		1.0	0.12	ug/L			01/10/23 12:07	1
Selenium	ND		2.0	0.52	ug/L			01/10/23 12:07	1
Silver	ND		1.0	0.23	ug/L			01/10/23 12:07	1
Thallium	ND		1.0	0.11	ug/L			01/10/23 12:07	1
Barium	ND		1.0	0.17	ug/L			01/10/23 12:07	1
Iron	ND		20	3.7	ug/L			01/10/23 12:07	1
Nickel	ND		2.0	0.17	ug/L			01/10/23 12:07	1
Vanadium	ND		2.0	0.17	ug/L			01/10/23 12:07	1
Arsenic	ND		1.0	0.16	ug/L			01/10/23 12:07	1
Zinc	ND		20	2.8	ug/L			01/10/23 12:07	1
Manganese	ND		1.0	0.41	ug/L			01/10/23 12:07	1
Chromium	ND		2.0	0.14	ug/L			01/10/23 12:07	1
Beryllium	ND		0.50	0.26	ug/L			01/10/23 12:07	1
Cobalt	ND		1.0	0.14	ug/L			01/10/23 12:07	1

Lab Sample ID: LCS 570-294776/2-A
Matrix: Water
Analysis Batch: 294822

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	80.0	76.9		ug/L		96	85 - 115
Cadmium	80.0	75.9		ug/L		95	85 - 115
Copper	80.0	76.3		ug/L		95	85 - 115
Lead	80.0	76.7		ug/L		96	85 - 115
Selenium	80.0	75.9		ug/L		95	85 - 115
Silver	80.0	76.2		ug/L		95	85 - 115
Thallium	80.0	75.2		ug/L		94	85 - 115
Barium	80.0	75.7		ug/L		95	85 - 115
Iron	800	786		ug/L		98	85 - 115
Nickel	80.0	75.6		ug/L		95	85 - 115
Vanadium	80.0	76.0		ug/L		95	85 - 115
Arsenic	80.0	74.1		ug/L		93	85 - 115
Zinc	80.0	75.0		ug/L		94	85 - 115
Manganese	80.0	76.3		ug/L		95	85 - 115
Chromium	80.0	76.3		ug/L		95	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-294776/2-A
Matrix: Water
Analysis Batch: 294822

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Beryllium	80.0	81.7		ug/L		102	85 - 115
Cobalt	80.0	75.9		ug/L		95	85 - 115

Lab Sample ID: LCSD 570-294776/3-A
Matrix: Water
Analysis Batch: 294822

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	80.0	76.1		ug/L		95	85 - 115	1	20
Cadmium	80.0	75.0		ug/L		94	85 - 115	1	20
Copper	80.0	76.7		ug/L		96	85 - 115	0	20
Lead	80.0	75.5		ug/L		94	85 - 115	2	20
Selenium	80.0	72.7		ug/L		91	85 - 115	4	20
Silver	80.0	76.2		ug/L		95	85 - 115	0	20
Thallium	80.0	75.0		ug/L		94	85 - 115	0	20
Barium	80.0	74.8		ug/L		94	85 - 115	1	20
Iron	800	787		ug/L		98	85 - 115	0	20
Nickel	80.0	76.3		ug/L		95	85 - 115	1	20
Vanadium	80.0	76.5		ug/L		96	85 - 115	1	20
Arsenic	80.0	72.9		ug/L		91	85 - 115	2	20
Zinc	80.0	73.2		ug/L		91	85 - 115	2	20
Manganese	80.0	75.7		ug/L		95	85 - 115	1	20
Chromium	80.0	76.3		ug/L		95	85 - 115	0	20
Beryllium	80.0	80.0		ug/L		100	85 - 115	2	20
Cobalt	80.0	76.2		ug/L		95	85 - 115	0	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-295230/1-A
Matrix: Water
Analysis Batch: 295765

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 295230

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		01/11/23 17:48	01/13/23 13:17	1

Lab Sample ID: LCS 570-295230/2-A
Matrix: Water
Analysis Batch: 295765

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 295230

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	8.10		ug/L		101	85 - 115

Lab Sample ID: LCSD 570-295230/3-A
Matrix: Water
Analysis Batch: 295765

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 295230

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	8.00	8.05		ug/L		101	85 - 115	1	10

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: 570-123038-2 MS
Client Sample ID: Outfall018_20230106_Comp
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 295765
Prep Batch: 295230

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		8.00	7.98		ug/L		100	85 - 115

Lab Sample ID: 570-123038-2 MSD
Client Sample ID: Outfall018_20230106_Comp
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 295765
Prep Batch: 295230

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		8.00	7.99		ug/L		100	85 - 115	0	10

Lab Sample ID: MB 570-295217/1-B
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 296261
Prep Batch: 295283

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		01/11/23 18:15	01/16/23 17:29	1

Lab Sample ID: LCS 570-295217/2-B
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 296261
Prep Batch: 295283

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	8.65		ug/L		108	85 - 115

Lab Sample ID: LCSD 570-295217/3-B
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 296261
Prep Batch: 295283

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	8.00	8.54		ug/L		107	85 - 115	1	10

Lab Sample ID: 570-123377-B-1-E MS
Client Sample ID: Matrix Spike
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 296261
Prep Batch: 295283

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		8.00	8.08		ug/L		101	85 - 115

Lab Sample ID: 570-123377-B-1-F MSD
Client Sample ID: Matrix Spike Duplicate
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 296261
Prep Batch: 295283

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		8.00	8.45		ug/L		106	85 - 115	4	10

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-296847/5-A
Matrix: Water
Analysis Batch: 296851

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296847

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		01/18/23 13:02	01/18/23 14:38	1

Lab Sample ID: LCS 570-296847/6-A
Matrix: Water
Analysis Batch: 296851

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296847

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	0.500	0.471		mg/L		94	90 - 110

Lab Sample ID: LCSD 570-296847/7-A
Matrix: Water
Analysis Batch: 296851

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296847

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	0.500	0.462		mg/L		92	90 - 110	2	20

Lab Sample ID: 380-33496-A-1-D MS
Matrix: Water
Analysis Batch: 296851

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 296847

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	0.036	J,DX	0.500	0.498		mg/L		92	90 - 110

Lab Sample ID: 380-33496-A-1-E MSD
Matrix: Water
Analysis Batch: 296851

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 296847

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	0.036	J,DX	0.500	0.499		mg/L		93	90 - 110	0	25

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-295446/11
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			01/11/23 14:55	1

Lab Sample ID: LCS 570-295446/12
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	255		ug/L		102	90 - 110

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate (Continued)

Lab Sample ID: LCSD 570-295446/18
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total			250	233		ug/L		93	90 - 110	9	20

Lab Sample ID: MRL 570-295446/10
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total			5.00	4.11	J,DX	ug/L		82	50 - 150		

Lab Sample ID: 570-122475-D-1 MS
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total	8.7		250	226		ug/L		87	70 - 130		

Lab Sample ID: 570-122475-D-1 MSD
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	8.7		250	266		ug/L		103	70 - 130	16	30

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-294338/1
Matrix: Water
Analysis Batch: 294338

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			1000	1000		NTU		100.1	99.0 - 101.0		

Lab Sample ID: LCSSRM 570-294338/2
Matrix: Water
Analysis Batch: 294338

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			10.0	10		NTU		101.0	99.0 - 101.0		

Lab Sample ID: LCSSRM 570-294338/3
Matrix: Water
Analysis Batch: 294338

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			0.0200	ND		NTU		100.0	0.0 - 200.0		

Method: SM 2130B - Turbidity (Continued)

Lab Sample ID: 570-123038-2 DU — **Client Sample ID: Outfall018_20230106_Comp**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 294338

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Turbidity	0.55			0.50		NTU				6	25

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-294886/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 294886

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			01/10/23 16:16	1

Lab Sample ID: LCS 570-294886/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 294886

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			1000	990		mg/L		99	84 - 108		

Lab Sample ID: LCSD 570-294886/3 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 294886

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids			1000	1010		mg/L		101	84 - 108	2	10

Lab Sample ID: 570-122597-A-1 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 294886

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1900			1850		mg/L				0	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-295140/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 295140

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/11/23 13:27	1

Lab Sample ID: LCS 570-295140/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 295140

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	99.0		mg/L		99	77 - 116		

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCSD 570-295140/3
Matrix: Water
Analysis Batch: 295140

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	109		mg/L		109	77 - 116	10	10

Lab Sample ID: 380-33505-B-1 DU
Matrix: Water
Analysis Batch: 295140

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	67			59.8		mg/L				12	10

Method: SM 5310D - Organic Carbon, Total (TOC)

Lab Sample ID: MB 570-294610/82
Matrix: Water
Analysis Batch: 294610

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon, Total Organic	ND		0.50	0.26	mg/L			01/11/23 01:21	1

Lab Sample ID: LCS 570-294610/83
Matrix: Water
Analysis Batch: 294610

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Carbon, Total Organic			5.03	5.05		mg/L		100	85 - 115		

Lab Sample ID: LCSD 570-294610/84
Matrix: Water
Analysis Batch: 294610

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon, Total Organic			5.03	5.06		mg/L		101	85 - 115	0	20

Lab Sample ID: 570-123296-H-1 MS ^4
Matrix: Water
Analysis Batch: 294610

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Carbon, Total Organic	7.2		20.1	27.2		mg/L		99	31 - 145		

Lab Sample ID: 570-123296-H-1 MSD ^4
Matrix: Water
Analysis Batch: 294610

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon, Total Organic	7.2		20.1	27.2		mg/L		99	31 - 145	0	20

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-294327/5-A
Matrix: Water
Analysis Batch: 294326

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 294327

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.30	0.054	mg/L		01/07/23 09:00	01/07/23 10:29	1

Lab Sample ID: LCS 570-294327/6-A
Matrix: Water
Analysis Batch: 294326

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 294327

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
MBAS	1.00	1.08		mg/L		108	85 - 111

Lab Sample ID: LCSD 570-294327/7-A
Matrix: Water
Analysis Batch: 294326

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 294327

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS	1.00	1.06		mg/L		106	85 - 111	2	7

Lab Sample ID: 570-123041-K-1-C MS
Matrix: Water
Analysis Batch: 294326

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 294327

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
MBAS	0.056	J,DX	1.00	1.20		mg/L		114	75 - 125

Lab Sample ID: 570-123041-K-1-D MSD
Matrix: Water
Analysis Batch: 294326

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 294327

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS	0.056	J,DX	1.00	1.21		mg/L		115	75 - 125	1	12

Method: SM5210B - BOD, 5 Day

Lab Sample ID: USB 570-295469/2
Matrix: Water
Analysis Batch: 295469

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L			01/07/23 11:30	1

Lab Sample ID: LCS 570-295469/4
Matrix: Water
Analysis Batch: 295469

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	199	189		mg/L		95	84.6 - 115.4

Method: SM5210B - BOD, 5 Day (Continued)

Lab Sample ID: 570-122916-A-1 DU
Matrix: Water
Analysis Batch: 295469

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Biochemical Oxygen Demand	2300			2280		mg/L				2	25

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

GC/MS VOA

Analysis Batch: 294255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	8260B SIM	
MB 570-294255/15	Method Blank	Total/NA	Water	8260B SIM	
LCS 570-294255/1012	Lab Control Sample	Total/NA	Water	8260B SIM	
LCSD 570-294255/13	Lab Control Sample Dup	Total/NA	Water	8260B SIM	

GC/MS Semi VOA

Analysis Batch: 295532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	625.1 SIM	295604
MB 570-295604/1-A	Method Blank	Total/NA	Water	625.1 SIM	295604

Prep Batch: 295604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	625	
MB 570-295604/1-A	Method Blank	Total/NA	Water	625	
LCS 570-295604/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-295604/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 296124

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-295604/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	295604
LCSD 570-295604/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	295604

GC Semi VOA

Prep Batch: 295632

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	608	
MB 570-295632/1-A	Method Blank	Total/NA	Water	608	
LCS 570-295632/2-A	Lab Control Sample	Total/NA	Water	608	
LCS 570-295632/4-A	Lab Control Sample	Total/NA	Water	608	
LCSD 570-295632/3-A	Lab Control Sample Dup	Total/NA	Water	608	
LCSD 570-295632/5-A	Lab Control Sample Dup	Total/NA	Water	608	

Analysis Batch: 295932

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	608.3	295632
MB 570-295632/1-A	Method Blank	Total/NA	Water	608.3	295632
LCS 570-295632/4-A	Lab Control Sample	Total/NA	Water	608.3	295632
LCSD 570-295632/5-A	Lab Control Sample Dup	Total/NA	Water	608.3	295632

Analysis Batch: 296152

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	608.3	295632
MB 570-295632/1-A	Method Blank	Total/NA	Water	608.3	295632
LCS 570-295632/2-A	Lab Control Sample	Total/NA	Water	608.3	295632
LCSD 570-295632/3-A	Lab Control Sample Dup	Total/NA	Water	608.3	295632

HPLC/IC

Analysis Batch: 294334

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	300.0	
MB 570-294334/5	Method Blank	Total/NA	Water	300.0	
LCS 570-294334/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-294334/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-123038-2 MS	Outfall018_20230106_Comp	Total/NA	Water	300.0	
570-123038-2 MSD	Outfall018_20230106_Comp	Total/NA	Water	300.0	

Analysis Batch: 294335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	300.0	
MB 570-294335/5	Method Blank	Total/NA	Water	300.0	
LCS 570-294335/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-294335/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-123038-2 MS	Outfall018_20230106_Comp	Total/NA	Water	300.0	
570-123038-2 MSD	Outfall018_20230106_Comp	Total/NA	Water	300.0	

Analysis Batch: 294364

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	218.6	
MB 570-294364/4	Method Blank	Total/NA	Water	218.6	
LCS 570-294364/5	Lab Control Sample	Total/NA	Water	218.6	
LCSD 570-294364/6	Lab Control Sample Dup	Total/NA	Water	218.6	
570-123038-2 MS	Outfall018_20230106_Comp	Total/NA	Water	218.6	
570-123038-2 MSD	Outfall018_20230106_Comp	Total/NA	Water	218.6	

Analysis Batch: 295613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	300.0	
MB 570-295613/5	Method Blank	Total/NA	Water	300.0	
LCS 570-295613/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-295613/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-123909-E-1 MS	Matrix Spike	Total/NA	Water	300.0	
570-123909-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 296211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	NO2NO3 Calc	

Analysis Batch: 296687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	314.0	
MB 570-296687/14	Method Blank	Total/NA	Water	314.0	
LCS 570-296687/15	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-296687/16	Lab Control Sample Dup	Total/NA	Water	314.0	
570-124106-K-3 MS	Matrix Spike	Total/NA	Water	314.0	
570-124106-K-3 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Metals

Analysis Batch: 294360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-1	Outfall018_20230106_Comp_F	Dissolved	Water	SM 2340B	
570-123038-2	Outfall018_20230106_Comp	Total Recoverable	Water	SM 2340B	

Filtration Batch: 294776

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-1	Outfall018_20230106_Comp_F	Dissolved	Water	Filtration	
MB 570-294776/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-294776/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-294776/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Filtration Batch: 294801

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-1	Outfall018_20230106_Comp_F	Dissolved	Water	Filtration	
MB 570-294801/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-294801/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-294801/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-122945-H-2-E MS	Matrix Spike	Dissolved	Water	Filtration	
570-122945-H-2-F MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Analysis Batch: 294822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-1	Outfall018_20230106_Comp_F	Dissolved	Water	200.8	294776
MB 570-294776/1-A	Method Blank	Dissolved	Water	200.8	294776
LCS 570-294776/2-A	Lab Control Sample	Dissolved	Water	200.8	294776
LCSD 570-294776/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	294776

Analysis Batch: 295098

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-1	Outfall018_20230106_Comp_F	Dissolved	Water	200.7 Rev 4.4	294801
MB 570-294801/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	294801
LCS 570-294801/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	294801
LCSD 570-294801/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	294801
570-122945-H-2-E MS	Matrix Spike	Dissolved	Water	200.7 Rev 4.4	294801
570-122945-H-2-F MSD	Matrix Spike Duplicate	Dissolved	Water	200.7 Rev 4.4	294801

Filtration Batch: 295217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-1	Outfall018_20230106_Comp_F	Dissolved	Water	Filtration	
MB 570-295217/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-295217/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-295217/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-123377-B-1-E MS	Matrix Spike	Dissolved	Water	Filtration	
570-123377-B-1-F MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Prep Batch: 295230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	245.1	
MB 570-295230/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-295230/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-295230/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
570-123038-2 MS	Outfall018_20230106_Comp	Total/NA	Water	245.1	

Metals (Continued)

Prep Batch: 295230 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2 MSD	Outfall018_20230106_Comp	Total/NA	Water	245.1	

Prep Batch: 295271

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total Recoverable	Water	200.7	
MB 570-295271/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 570-295271/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
LCSD 570-295271/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7	
570-123346-A-1-C MS	Matrix Spike	Total Recoverable	Water	200.7	
570-123346-A-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7	

Prep Batch: 295281

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total Recoverable	Water	200.8	
MB 570-295281/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-295281/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-295281/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-122995-B-7-B MS	Matrix Spike	Total Recoverable	Water	200.8	
570-122995-B-7-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	

Prep Batch: 295283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-1	Outfall018_20230106_Comp_F	Dissolved	Water	245.1	295217
MB 570-295217/1-B	Method Blank	Dissolved	Water	245.1	295217
LCS 570-295217/2-B	Lab Control Sample	Dissolved	Water	245.1	295217
LCSD 570-295217/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	295217
570-123377-B-1-E MS	Matrix Spike	Dissolved	Water	245.1	295217
570-123377-B-1-F MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	295217

Analysis Batch: 295467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total Recoverable	Water	200.8	295281
MB 570-295281/1-A	Method Blank	Total Recoverable	Water	200.8	295281
LCS 570-295281/2-A	Lab Control Sample	Total Recoverable	Water	200.8	295281
LCSD 570-295281/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	295281
570-122995-B-7-B MS	Matrix Spike	Total Recoverable	Water	200.8	295281
570-122995-B-7-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	295281

Analysis Batch: 295765

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	245.1	295230
MB 570-295230/1-A	Method Blank	Total/NA	Water	245.1	295230
LCS 570-295230/2-A	Lab Control Sample	Total/NA	Water	245.1	295230
LCSD 570-295230/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	295230
570-123038-2 MS	Outfall018_20230106_Comp	Total/NA	Water	245.1	295230
570-123038-2 MSD	Outfall018_20230106_Comp	Total/NA	Water	245.1	295230

Analysis Batch: 296261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-1	Outfall018_20230106_Comp_F	Dissolved	Water	245.1	295283
MB 570-295217/1-B	Method Blank	Dissolved	Water	245.1	295283

Metals (Continued)

Analysis Batch: 296261 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-295217/2-B	Lab Control Sample	Dissolved	Water	245.1	295283
LCSD 570-295217/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	295283
570-123377-B-1-E MS	Matrix Spike	Dissolved	Water	245.1	295283
570-123377-B-1-F MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	295283

Analysis Batch: 296497

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total Recoverable	Water	200.7 Rev 4.4	295271
MB 570-295271/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	295271
LCS 570-295271/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	295271
LCSD 570-295271/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	295271
570-123346-A-1-C MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	295271
570-123346-A-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	295271

General Chemistry

Analysis Batch: 294326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	SM 5540C	294327
MB 570-294327/5-A	Method Blank	Total/NA	Water	SM 5540C	294327
LCS 570-294327/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	294327
LCSD 570-294327/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	294327
570-123041-K-1-C MS	Matrix Spike	Total/NA	Water	SM 5540C	294327
570-123041-K-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5540C	294327

Prep Batch: 294327

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	SM 5540C	
MB 570-294327/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-294327/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-294327/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	
570-123041-K-1-C MS	Matrix Spike	Total/NA	Water	SM 5540C	
570-123041-K-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5540C	

Analysis Batch: 294338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	SM 2130B	
LCSSRM 570-294338/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-294338/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-294338/3	Lab Control Sample	Total/NA	Water	SM 2130B	
570-123038-2 DU	Outfall018_20230106_Comp	Total/NA	Water	SM 2130B	

Analysis Batch: 294610

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	SM 5310D	
MB 570-294610/82	Method Blank	Total/NA	Water	SM 5310D	
LCS 570-294610/83	Lab Control Sample	Total/NA	Water	SM 5310D	
LCSD 570-294610/84	Lab Control Sample Dup	Total/NA	Water	SM 5310D	
570-123296-H-1 MS ^4	Matrix Spike	Total/NA	Water	SM 5310D	
570-123296-H-1 MSD ^4	Matrix Spike Duplicate	Total/NA	Water	SM 5310D	

General Chemistry

Analysis Batch: 294886

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	SM 2540C	
MB 570-294886/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-294886/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-294886/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
570-122597-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 295140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	SM 2540D	
MB 570-295140/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-295140/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-295140/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
380-33505-B-1 DU	Duplicate	Total/NA	Water	SM 2540D	

Analysis Batch: 295446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	Kelada 01	
MB 570-295446/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-295446/12	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-295446/18	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-295446/10	Lab Control Sample	Total/NA	Water	Kelada 01	
570-122475-D-1 MS	Matrix Spike	Total/NA	Water	Kelada 01	
570-122475-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	Kelada 01	

Analysis Batch: 295469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	SM5210B	
USB 570-295469/2	Method Blank	Total/NA	Water	SM5210B	
LCS 570-295469/4	Lab Control Sample	Total/NA	Water	SM5210B	
570-122916-A-1 DU	Duplicate	Total/NA	Water	SM5210B	

Analysis Batch: 296119

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	218.6 CR3	

Prep Batch: 296847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	Distill/Ammonia	
MB 570-296847/5-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-296847/6-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-296847/7-A	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	
380-33496-A-1-D MS	Matrix Spike	Total/NA	Water	Distill/Ammonia	
380-33496-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 296851

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	350.1	296847
MB 570-296847/5-A	Method Blank	Total/NA	Water	350.1	296847
LCS 570-296847/6-A	Lab Control Sample	Total/NA	Water	350.1	296847
LCSD 570-296847/7-A	Lab Control Sample Dup	Total/NA	Water	350.1	296847
380-33496-A-1-D MS	Matrix Spike	Total/NA	Water	350.1	296847

General Chemistry (Continued)

Analysis Batch: 296851 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-33496-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	296847

Client Sample ID: Outfall018_20230106_Comp_F — Lab Sample ID: 570-123038-1

Date Collected: 01/06/23 10:15 **Matrix: Water**
Date Received: 01/06/23 18:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	294801	01/10/23 11:45	ECX6	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			295098	01/11/23 09:36	K1UV	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	294776	01/10/23 11:06	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			294822	01/10/23 12:13	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Dissolved	Filtration	Filtration			25 mL	50 mL	295217	01/11/23 17:44	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	295283	01/11/23 18:15	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			296261	01/16/23 17:56	C0YH	EET CAL 4
	Instrument ID: HG8									
Dissolved	Analysis	SM 2340B		1			294360	01/12/23 16:31	P1R	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: Outfall018_20230106_Comp — Lab Sample ID: 570-123038-2

Date Collected: 01/06/23 10:15 **Matrix: Water**
Date Received: 01/06/23 18:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B SIM		1	25 mL	25 mL	294255	01/07/23 01:35	UJHB	EET CAL 4
	Instrument ID: GCMSR									
Total/NA	Prep	625			1061.7 mL	2 mL	295604	01/13/23 05:33	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	295532	01/13/23 20:31	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Prep	608			1500 mL	1 mL	295632	01/13/23 08:26	OAJ3	EET CAL 4
Total/NA	Analysis	608.3		1	1 mL	1 mL	296152	01/16/23 15:26	N5Y3	EET CAL 4
	Instrument ID: GC52A									
Total/NA	Prep	608			1500 mL	1 mL	295632	01/13/23 08:26	OAJ3	EET CAL 4
Total/NA	Analysis	608.3		1	1 mL	1 mL	295932	01/14/23 14:37	AJ2Q	EET CAL 4
	Instrument ID: GC66									
Total/NA	Analysis	218.6		1	4 mL	4 mL	294364	01/09/23 04:17	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	300.0		1	4 mL	4 mL	294334	01/07/23 16:06	PS	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	300.0		1	4 mL	4 mL	294335	01/07/23 16:06	PS	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	300.0		5	4 mL	4 mL	295613	01/13/23 15:35	UIP1	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	314.0		1	4 mL	4 mL	296687	01/19/23 01:33	M5Z3	EET CAL 4
	Instrument ID: IC13									
Total/NA	Analysis	NO2NO3 Calc		1			296211	01/16/23 15:37	WH6J	EET CAL 1
	Instrument ID: NOEQUIP									
Total Recoverable	Prep	200.7			50 mL	50 mL	295271	01/12/23 06:20	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			296497	01/17/23 13:44	P1R	EET CAL 4
	Instrument ID: ICP11									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Client Sample ID: Outfall018_20230106_Comp
Date Collected: 01/06/23 10:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123038-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.8			50 mL	50 mL	295281	01/12/23 00:28	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			295467	01/12/23 12:48	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Prep	245.1			25 mL	50 mL	295230	01/11/23 17:48	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			295765	01/13/23 13:22	C0YH	EET CAL 4
	Instrument ID: HG8									
Total Recoverable	Analysis	SM 2340B		1			294360	01/13/23 16:31	P1R	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	218.6 CR3		1			296119	01/16/23 11:45	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	296847	01/18/23 13:02	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	296851	01/18/23 14:54	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	295446	01/11/23 14:55	GG0B	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2130B		1			294338	01/07/23 13:58	ZVB7	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	294886	01/10/23 16:16	ZL7L	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	295140	01/11/23 13:27	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 5310D		1	40 mL	40 mL	294610	01/11/23 06:57	UAPD	EET CAL 4
	Instrument ID: TOC8									
Total/NA	Prep	SM 5540C			100 mL	100 mL	294327	01/07/23 09:00	ZVB7	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	294326	01/07/23 10:39	ZVB7	EET CAL 4
	Instrument ID: UV9									
Total/NA	Analysis	SM5210B		1			295469	01/07/23 13:18	U7UR	EET CAL 4
	Instrument ID: BOD3									

Laboratory References:

EET CAL 1 = Eurofins Calscience Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method	Method Description	Protocol	Laboratory
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	EET CAL 4
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
608.3	Organochlorine Pesticides in Water	EPA	EET CAL 4
608.3	Polychlorinated Biphenyls (PCBs) (GC)	EPA	EET CAL 4
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 1
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CAL 4
218.6 CR3	Chromium, Trivalent (Calculation)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 5310D	Organic Carbon, Total (TOC)	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
SM5210B	BOD, 5 Day	SM	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
5030C	Purge and Trap	SW846	EET CAL 4
608	Liquid-Liquid Extraction (Separatory Funnel)	EPA	EET CAL 4
625	Liquid-Liquid Extraction	EPA	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 1 = Eurofins Calscience Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123038-1	Outfall018_20230106_Comp_F	Water	01/06/23 10:15	01/06/23 18:15
570-123038-2	Outfall018_20230106_Comp	Water	01/06/23 10:15	01/06/23 18:15

Eurofins Calscience Irvine

570-123038 Chain of Custody

CHAIN OF CUSTODY FORM

123038

Loc: 570

123038

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Page 2 of 2

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

ANALYSIS REQUIRED

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	(R/A) Total Dissolved Metals. (E200.7): As, Ba, B, Be, Co, Cr Fe, Mn, Ni, V Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	(R) Cyanide (SM4500-CN-E / E335.2)	(R) Gross Alpha(E900.0) Gross Beta(E900.0) Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901 0 or E901 1)	(R) Chronic Toxicity - Selenastrum	(A) 1 4-Dioxane (E624 (SW8260M_SIM))	(A) Total Organic Carbon (415.2 (SM 5310B))	(A) Monomethyl hydrazine (SW8315M/DV-WC-0077)	(A) Cr (VI), Total (E218.6)	(R) Total Dissolved Metals. Mercury (E245.1)	(QRSW) Chlorpyrifos, Diazinon (E525.2)	Comments
Outfall 018	Outfall018_20230106_Comp_F	1/6/2023 1015	WM	1 L Poly	1	None	190	No	X										Filter and preserve w/in 24hrs of receipt at lab.
			WM	borosilicate vials	1	None	320	No									X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230106_Comp	1/6/2023 1015	WM	500 mL Poly	1	NaOH	220	No		X									
			WM	2.5 Gal Cube	1	None	225	No		\	X								Unfiltered and unpreserved analysis, Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
			WM	1 L Glass Amber	1	None	230	No											
			WM	1 Gal Cube	6	None	235	No				x							Only test if first or second rain events of the year ✱ Deliver to ABC Labs [partly illegible]
			WM	40 mL VOA	3	HCl	240	No					X						
			WM	1 L Glass Amber	1	HCl	245	No						X					
			WM	8 oz. glass amber	1	H_2SO_4	255	No							X				
			WM	500 mL Poly	1	None	260	No								X			
			WM	1L Glass Amber	2	None	275	No										X	Extract [partly illegible] at Weck Labs at Outfall 002, 011, or 018.
	Outfall018_20230106_Comp_Extra	1/6/2023 1015	WM	40 mL VOA	3	HCl	240	No					H						Hold
			WM	1 L Glass Amber	2	None	255	No							H				Hold

Legend A=Annual, R=Routine, QRSW=Quarterly Receiving Water

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-6-2023 / 1300	H&A	[signature]	1/6/23 1300 EC
[signature]	1/6/23 1815	EC	[signature]	1/6/23 1815 FC

Turn-around time (Check)
24 Hour ______ 72 Hour ______ 10 Day: X
48 Hour ______ 5 Day ______ Normal: ______

Sample Integrity (Check)
Intact: ______ On Ice: ______
Store samples for 6 months.
Data Requirements: (Check)
No Level IV ______ All Level IV: X

✱ Sampled hand delivered to ABC Labs on copied COC

1.7/17, 19/19, 21/21 Sc 11

2019-2020 Rainy Season
Version 5

123038

2|2

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

									R/A	R	R	R	R/A	R	R	R	A	A	R					
									ANALYSIS REQUIRED															
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.7): As, Ba, B, Be, Co, Cr, Fe, Mn, Ni, V, Zn Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl [3]	TCDD (and all congeners) (E1613B) [4]	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc)) [5]	Surfactants (MBAS) (SM5540C/E425.1) [6]	Cl- F- SO4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300) [7]	Turbidity TDS (SM2540C/E180.1) [8]	TSS (160.2 (SM2540D)) [9]	Ammonia-N (E350.2) [10]	Priority Pollutants-Pesticides+PCBs (E608) [11]	Priority Pollutants-SVOCs (E625)	Total Recoverable Metals: Mercury (E245.1) [12]				Comments
Outfall 018	Outfall018_20230106_Comp	1/6/2023 1015	WM	500 mL Poly	1	HNO_3	80	No	X										X					
			WM	1 L Glass Amber	2	None	110	No		X														
			WM	1 L Poly	1	None	115	No			X													
			WM	500 mL Poly	2	None	120	No				X												
			WM	500 mL Poly	2	None	125	No					X											48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X										48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X								
			WM	1 L Glass Amber	2	None	250	No									X							
			WM	1 L Glass Amber	2	None	175	No										X						
			WM	1 L Poly	1	None	185	No							X									
	Outfall018_20230106_Comp_Extra	1/6/2023 1015	WM	1 L Glass Amber	2	None	110	No		H														Hold
			WM	500 mL Poly	2	None	120	No				H												Hold
			WM	500 mL Poly	2	None	125	No					H											Hold
			WM	1 L Glass Amber	2	None	250	No										H						Hold
			WM	1 L Glass Amber	2	None	175	No											H					Hold

Legend: A=Annual, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-6-2023/1300	H.A	[signature]	1/6/23 1300 EC
[signature]	1/6/23 1815	EC	[signature]	1/6/23 1815 EC

Turn-around time: (Check)
24 Hour _____ 72 Hour _____ 10 Day ___X___
48 Hour _____ 5 Day _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

17/1.7 1.9/1.9 2 1/2.1 SCII

4/4/2023 (Rev. 3)

2019-2020 Rainy Season
Version 5

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-203552 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123038-5
Address: 13715 Rider Trail North,	Due Date Requested: 2/8/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B NaOH, C Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation Gross Alpha/Beta	906 0/LSC_Dist_Susp Tritium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230106_Comp (570-123038-2)	1/6/23	10 15 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/9/23 1420	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-203580 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123038-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/24/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall018_20230106_Comp (570-123038-2)	1/6/23	10 15 Pacific		Water			X		2	See QAS, Boeing_w/u to zero ug/L, Use Boeing glassware.
Outfall018_20230106_Comp_Extra (570-123038-3)	1/6/23	10 15 Pacific		Water				X	2	See QAS, Boeing_w/u to zero, ug/L, Use Boeing glassware

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/9/23 1552	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123038-1

Login Number: 123038
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 018 - COMP

JOB NUMBER

570-123038-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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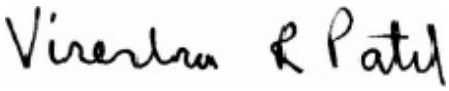
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123038-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123038-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123038-2

Comments
No additional comments.

Receipt
The samples were received on 1/6/2023 6:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.1º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: (CCV 320-651542/2) and (MB 320-646691/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: Outfall018_20230106_Comp (570-123038-2) and (CCV 320-651543/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Client Sample ID: Outfall018_20230106_Comp
Lab Sample ID: 570-123038-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.0000012	J,DX MB	0.000052	0.00000018	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.00000050	J,DX MB q	0.000052	0.00000024	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000025	J,DX MB	0.000052	0.00000031	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.00000082	J,DX MB	0.000052	0.00000026	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000010	J,DX MB q	0.000052	0.00000026	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000026	J,DX MB	0.000052	0.00000014	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000074	J,DX MB	0.000052	0.00000015	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000042	J,DX MB	0.000052	0.00000026	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000022	J,DX MB q	0.000052	0.00000024	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.00000051	J,DX MB q	0.000052	0.00000018	ug/L	1		1613B	Total/NA
OCDD	0.000015	J,DX MB	0.00010	0.00000028	ug/L	1		1613B	Total/NA
OCDF	0.0000021	J,DX MB	0.00010	0.00000015	ug/L	1		1613B	Total/NA
Total TCDF	0.0000023	J,DX MB q	0.000010	0.00000012	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000034	J,DX MB q	0.000052	0.00000018	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000051	J,DX MB q	0.000052	0.00000026	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000052	J,DX MB q	0.000052	0.00000014	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000084	J,DX MB	0.000052	0.00000026	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000032	J,DX MB q	0.000052	0.00000018	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: Outfall018_20230106_Comp
Date Collected: 01/06/23 10:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123038-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000022	ug/L		01/13/23 05:53	01/28/23 08:30	1
1,2,3,7,8-PeCDD	ND		0.000052	0.00000025	ug/L		01/13/23 05:53	01/28/23 08:30	1
1,2,3,7,8-PeCDF	**0.0000012**	**J,DX MB**	0.000052	0.00000018	ug/L		01/13/23 05:53	01/28/23 08:30	1
2,3,4,7,8-PeCDF	**0.00000050**	**J,DX MB q**	0.000052	0.00000024	ug/L		01/13/23 05:53	01/28/23 08:30	1
1,2,3,4,7,8-HxCDD	**0.0000025**	**J,DX MB**	0.000052	0.00000031	ug/L		01/13/23 05:53	01/28/23 08:30	1
1,2,3,6,7,8-HxCDD	ND		0.000052	0.00000027	ug/L		01/13/23 05:53	01/28/23 08:30	1
1,2,3,7,8,9-HxCDD	**0.00000082**	**J,DX MB**	0.000052	0.00000026	ug/L		01/13/23 05:53	01/28/23 08:30	1
1,2,3,4,7,8-HxCDF	**0.0000010**	**J,DX MB q**	0.000052	0.00000026	ug/L		01/13/23 05:53	01/28/23 08:30	1
1,2,3,6,7,8-HxCDF	ND		0.000052	0.00000024	ug/L		01/13/23 05:53	01/28/23 08:30	1
1,2,3,7,8,9-HxCDF	**0.0000026**	**J,DX MB**	0.000052	0.00000014	ug/L		01/13/23 05:53	01/28/23 08:30	1
2,3,4,6,7,8-HxCDF	**0.00000074**	**J,DX MB**	0.000052	0.00000015	ug/L		01/13/23 05:53	01/28/23 08:30	1
1,2,3,4,6,7,8-HpCDD	**0.0000042**	**J,DX MB**	0.000052	0.00000026	ug/L		01/13/23 05:53	01/28/23 08:30	1
1,2,3,4,6,7,8-HpCDF	**0.0000022**	**J,DX MB q**	0.000052	0.00000024	ug/L		01/13/23 05:53	01/28/23 08:30	1
1,2,3,4,7,8,9-HpCDF	**0.00000051**	**J,DX MB q**	0.000052	0.00000018	ug/L		01/13/23 05:53	01/28/23 08:30	1
OCDD	**0.000015**	**J,DX MB**	0.00010	0.00000028	ug/L		01/13/23 05:53	01/28/23 08:30	1
OCDF	**0.0000021**	**J,DX MB**	0.00010	0.00000015	ug/L		01/13/23 05:53	01/28/23 08:30	1
Total TCDD	ND		0.000010	0.00000022	ug/L		01/13/23 05:53	01/28/23 08:30	1
Total TCDF	**0.0000023**	**J,DX MB q**	0.000010	0.00000012	ug/L		01/13/23 05:53	01/28/23 08:30	1
Total PeCDD	ND		0.000052	0.00000025	ug/L		01/13/23 05:53	01/28/23 08:30	1
Total PeCDF	**0.0000034**	**J,DX MB q**	0.000052	0.00000018	ug/L		01/13/23 05:53	01/28/23 08:30	1
Total HxCDD	**0.0000051**	**J,DX MB q**	0.000052	0.00000026	ug/L		01/13/23 05:53	01/28/23 08:30	1
Total HxCDF	**0.0000052**	**J,DX MB q**	0.000052	0.00000014	ug/L		01/13/23 05:53	01/28/23 08:30	1
Total HpCDD	**0.0000084**	**J,DX MB**	0.000052	0.00000026	ug/L		01/13/23 05:53	01/28/23 08:30	1
Total HpCDF	**0.0000032**	**J,DX MB q**	0.000052	0.00000018	ug/L		01/13/23 05:53	01/28/23 08:30	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*79*		*25 - 164*	*01/13/23 05:53*	*01/28/23 08:30*	*1*
13C-2,3,7,8-TCDF	*83*		*24 - 169*	*01/13/23 05:53*	*01/28/23 08:30*	*1*
13C-1,2,3,7,8-PeCDD	*61*		*25 - 181*	*01/13/23 05:53*	*01/28/23 08:30*	*1*
13C-1,2,3,7,8-PeCDF	*67*		*24 - 185*	*01/13/23 05:53*	*01/28/23 08:30*	*1*
13C-2,3,4,7,8-PeCDF	*55*		*21 - 178*	*01/13/23 05:53*	*01/28/23 08:30*	*1*
13C-1,2,3,4,7,8-HxCDD	*46*		*32 - 141*	*01/13/23 05:53*	*01/28/23 08:30*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: Outfall018_20230106_Comp
Lab Sample ID: 570-123038-2
Date Collected: 01/06/23 10:15
Matrix: Water
Date Received: 01/06/23 18:15

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,6,7,8-HxCDD	58		28 - 130	01/13/23 05:53	01/28/23 08:30	1
13C-1,2,3,4,7,8-HxCDF	42		26 - 152	01/13/23 05:53	01/28/23 08:30	1
13C-1,2,3,6,7,8-HxCDF	50		26 - 123	01/13/23 05:53	01/28/23 08:30	1
13C-1,2,3,7,8,9-HxCDF	87		29 - 147	01/13/23 05:53	01/28/23 08:30	1
13C-2,3,4,6,7,8-HxCDF	78		28 - 136	01/13/23 05:53	01/28/23 08:30	1
13C-1,2,3,4,6,7,8-HpCDD	71		23 - 140	01/13/23 05:53	01/28/23 08:30	1
13C-1,2,3,4,6,7,8-HpCDF	52		28 - 143	01/13/23 05:53	01/28/23 08:30	1
13C-1,2,3,4,7,8,9-HpCDF	79		26 - 138	01/13/23 05:53	01/28/23 08:30	1
13C-OCDD	96		17 - 157	01/13/23 05:53	01/28/23 08:30	1
13C-OCDF	86		17 - 157	01/13/23 05:53	01/28/23 08:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	92		35 - 197	01/13/23 05:53	01/28/23 08:30	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: Outfall018_20230106_Comp
Lab Sample ID: 570-123038-2
Date Collected: 01/06/23 10:15
Matrix: Water
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.000010	0.00000037	ug/L		01/13/23 05:53	02/03/23 15:16	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*74*		*24 - 169*	*01/13/23 05:53*	*02/03/23 15:16*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*106*		*35 - 197*	*01/13/23 05:53*	*02/03/23 15:16*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (35-197)								
570-123038-2	Outfall018_20230106_Comp	92								
570-123038-2 - RA	Outfall018_20230106_Comp	106								
MB 320-646691/1-A	Method Blank	90								
MB 320-646691/1-A - RA	Method Blank	109								

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (31-191)								
LCS 320-646691/2-A	Lab Control Sample	91								
LCSD 320-646691/3-A	Lab Control Sample Dup	93								

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc. Job ID: 570-123038-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-123038-2	Outfall018_20230106_Comp	79	83	61	67	55	46	58	42
570-123038-2 - RA	Outfall018_20230106_Comp		74						
MB 320-646691/1-A	Method Blank	74	76	56	61	52	41	51	35
MB 320-646691/1-A - RA	Method Blank		69						

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-123038-2	Outfall018_20230106_Comp	50	87	78	71	52	79	96	86
570-123038-2 - RA	Outfall018_20230106_Comp								
MB 320-646691/1-A	Method Blank	45	78	72	65	46	72	85	77
MB 320-646691/1-A - RA	Method Blank								

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-646691/2-A	Lab Control Sample	75	78	61	65	56	45	56	41
LCSD 320-646691/3-A	Lab Control Sample Dup	79	82	65	68	61	51	60	44

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-646691/2-A	Lab Control Sample	48	80	75	69	52	75	90	83
LCSD 320-646691/3-A	Lab Control Sample Dup	53	85	81	73	56	79	96	87

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-646691/1-A
Matrix: Water
Analysis Batch: 650041

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 646691

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000027	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,7,8-PeCDD	0.00000109	J,DX	0.000050	0.00000025	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,7,8-PeCDF	0.00000239	J,DX	0.000050	0.00000022	ug/L		01/13/23 05:53	01/28/23 03:52	1
2,3,4,7,8-PeCDF	0.00000133	J,DX	0.000050	0.00000028	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,4,7,8-HxCDD	0.00000338	J,DX	0.000050	0.00000053	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,6,7,8-HxCDD	0.00000160	J,DX	0.000050	0.00000045	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,7,8,9-HxCDD	0.00000210	J,DX	0.000050	0.00000043	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,4,7,8-HxCDF	0.00000258	J,DX	0.000050	0.00000034	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,6,7,8-HxCDF	0.00000147	J,DX	0.000050	0.00000028	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,7,8,9-HxCDF	0.00000327	J,DX	0.000050	0.00000017	ug/L		01/13/23 05:53	01/28/23 03:52	1
2,3,4,6,7,8-HxCDF	0.000000951	J,DX	0.000050	0.00000017	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,4,6,7,8-HpCDD	0.00000236	J,DX	0.000050	0.00000025	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,4,6,7,8-HpCDF	0.00000235	J,DX q	0.000050	0.00000030	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,4,7,8,9-HpCDF	0.00000153	J,DX	0.000050	0.00000022	ug/L		01/13/23 05:53	01/28/23 03:52	1
OCDD	0.00000763	J,DX	0.00010	0.00000023	ug/L		01/13/23 05:53	01/28/23 03:52	1
OCDF	0.00000335	J,DX	0.00010	0.00000020	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total TCDD	ND		0.000010	0.00000027	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total TCDF	0.00000123	J,DX q	0.000010	0.00000013	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total PeCDD	0.00000109	J,DX	0.000050	0.00000025	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total PeCDF	0.00000405	J,DX q	0.000050	0.00000022	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total HxCDD	0.00000708	J,DX	0.000050	0.00000043	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total HxCDF	0.00000931	J,DX	0.000050	0.00000017	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total HpCDD	0.00000448	J,DX	0.000050	0.00000025	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total HpCDF	0.00000388	J,DX q	0.000050	0.00000022	ug/L		01/13/23 05:53	01/28/23 03:52	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*74*		*25 - 164*	*01/13/23 05:53*	*01/28/23 03:52*	*1*
13C-2,3,7,8-TCDF	*76*		*24 - 169*	*01/13/23 05:53*	*01/28/23 03:52*	*1*
13C-1,2,3,7,8-PeCDD	*56*		*25 - 181*	*01/13/23 05:53*	*01/28/23 03:52*	*1*
13C-1,2,3,7,8-PeCDF	*61*		*24 - 185*	*01/13/23 05:53*	*01/28/23 03:52*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-646691/1-A
Matrix: Water
Analysis Batch: 650041

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 646691

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	52		21 - 178	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,4,7,8-HxCDD	41		32 - 141	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,6,7,8-HxCDD	51		28 - 130	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,4,7,8-HxCDF	35		26 - 152	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,6,7,8-HxCDF	45		26 - 123	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,7,8,9-HxCDF	78		29 - 147	01/13/23 05:53	01/28/23 03:52	1
13C-2,3,4,6,7,8-HxCDF	72		28 - 136	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,4,6,7,8-HpCDD	65		23 - 140	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,4,6,7,8-HpCDF	46		28 - 143	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,4,7,8,9-HpCDF	72		26 - 138	01/13/23 05:53	01/28/23 03:52	1
13C-OCDD	85		17 - 157	01/13/23 05:53	01/28/23 03:52	1
13C-OCDF	77		17 - 157	01/13/23 05:53	01/28/23 03:52	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	90		35 - 197	01/13/23 05:53	01/28/23 03:52	1

Lab Sample ID: LCS 320-646691/2-A
Matrix: Water
Analysis Batch: 650041

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 646691

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000214		ug/L		107	67 - 158		
2,3,7,8-TCDF			0.000200	0.000217	MB	ug/L		109	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.00111	MB	ug/L		111	70 - 142		
1,2,3,7,8-PeCDF			0.00100	0.00111	MB	ug/L		111	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.00114	MB	ug/L		114	68 - 160		
1,2,3,4,7,8-HxCDD			0.00100	0.00107	MB	ug/L		107	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.00104	MB	ug/L		104	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.00153	MB	ug/L		153	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.00109	MB	ug/L		109	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.00111	MB	ug/L		111	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.00108	MB	ug/L		108	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.00109	MB	ug/L		109	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.00109	MB	ug/L		109	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.00105	MB	ug/L		105	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.00111	MB	ug/L		111	78 - 138		
OCDD			0.00200	0.00201	MB	ug/L		100	78 - 144		
OCDF			0.00200	0.00225	MB	ug/L		113	63 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	75		20 - 175
13C-2,3,7,8-TCDF	78		22 - 152
13C-1,2,3,7,8-PeCDD	61		21 - 227
13C-1,2,3,7,8-PeCDF	65		21 - 192
13C-2,3,4,7,8-PeCDF	56		13 - 328
13C-1,2,3,4,7,8-HxCDD	45		21 - 193
13C-1,2,3,6,7,8-HxCDD	56		25 - 163
13C-1,2,3,4,7,8-HxCDF	41		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-646691/2-A
Matrix: Water
Analysis Batch: 650041

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 646691

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	48		21 - 159
13C-1,2,3,7,8,9-HxCDF	80		17 - 205
13C-2,3,4,6,7,8-HxCDF	75		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	69		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	52		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	75		20 - 186
13C-OCDD	90		13 - 199
13C-OCDF	83		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	91		31 - 191

Lab Sample ID: LCSD 320-646691/3-A
Matrix: Water
Analysis Batch: 650041

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 646691

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000211		ug/L		105	67 - 158	1	50
2,3,7,8-TCDF			0.000200	0.000216	MB	ug/L		108	75 - 158	1	50
1,2,3,7,8-PeCDD			0.00100	0.00109	MB	ug/L		109	70 - 142	1	50
1,2,3,7,8-PeCDF			0.00100	0.00110	MB	ug/L		110	80 - 134	1	50
2,3,4,7,8-PeCDF			0.00100	0.00112	MB	ug/L		112	68 - 160	2	50
1,2,3,4,7,8-HxCDD			0.00100	0.00105	MB	ug/L		105	70 - 164	1	50
1,2,3,6,7,8-HxCDD			0.00100	0.00103	MB	ug/L		103	76 - 134	2	50
1,2,3,7,8,9-HxCDD			0.00100	0.00145	MB	ug/L		145	64 - 162	5	50
1,2,3,4,7,8-HxCDF			0.00100	0.00108	MB	ug/L		108	72 - 134	1	50
1,2,3,6,7,8-HxCDF			0.00100	0.00110	MB	ug/L		110	84 - 130	1	50
1,2,3,7,8,9-HxCDF			0.00100	0.00107	MB	ug/L		107	78 - 130	1	50
2,3,4,6,7,8-HxCDF			0.00100	0.00108	MB	ug/L		108	70 - 156	1	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.00107	MB	ug/L		107	70 - 140	2	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00104	MB	ug/L		104	82 - 122	0	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.00109	MB	ug/L		109	78 - 138	2	50
OCDD			0.00200	0.00196	MB	ug/L		98	78 - 144	2	50
OCDF			0.00200	0.00222	MB	ug/L		111	63 - 170	1	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	79		20 - 175
13C-2,3,7,8-TCDF	82		22 - 152
13C-1,2,3,7,8-PeCDD	65		21 - 227
13C-1,2,3,7,8-PeCDF	68		21 - 192
13C-2,3,4,7,8-PeCDF	61		13 - 328
13C-1,2,3,4,7,8-HxCDD	51		21 - 193
13C-1,2,3,6,7,8-HxCDD	60		25 - 163
13C-1,2,3,4,7,8-HxCDF	44		19 - 202
13C-1,2,3,6,7,8-HxCDF	53		21 - 159
13C-1,2,3,7,8,9-HxCDF	85		17 - 205
13C-2,3,4,6,7,8-HxCDF	81		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	73		26 - 166

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-646691/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 650041 **Prep Batch: 646691**

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDF	56		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	79		20 - 186
13C-OCDD	96		13 - 199
13C-OCDF	87		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	93		31 - 191

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Lab Sample ID: MB 320-646691/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 651542 **Prep Batch: 646691**

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF - RA	ND		0.000010	0.00000046	ug/L		01/13/23 05:53	02/03/23 08:59	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF - RA	69		24 - 169	01/13/23 05:53	02/03/23 08:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD - RA	109		35 - 197	01/13/23 05:53	02/03/23 08:59	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Specialty Organics

Prep Batch: 646691

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2 - RA	Outfall018_20230106_Comp	Total/NA	Water	1613B	
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	1613B	
MB 320-646691/1-A - RA	Method Blank	Total/NA	Water	1613B	
MB 320-646691/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-646691/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-646691/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 650041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	1613B	646691
MB 320-646691/1-A	Method Blank	Total/NA	Water	1613B	646691
LCS 320-646691/2-A	Lab Control Sample	Total/NA	Water	1613B	646691
LCSD 320-646691/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	646691

Analysis Batch: 651542

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-646691/1-A - RA	Method Blank	Total/NA	Water	1613B	646691

Analysis Batch: 651543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2 - RA	Outfall018_20230106_Comp	Total/NA	Water	1613B	646691

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Client Sample ID: Outfall018_20230106_Comp
Lab Sample ID: 570-123038-2

Date Collected: 01/06/23 10:15
Matrix: Water
Date Received: 01/06/23 18:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		954.2 mL	20.0 uL	646691	01/13/23 05:53	FC	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	651543	02/03/23 15:16	GRB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			954.2 mL	20.0 uL	646691	01/13/23 05:53	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	650041	01/28/23 08:30	GRB	EET SAC
	Instrument ID: 12D5									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23 *
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Job ID: 570-123038-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123038-2	Outfall018_20230106_Comp	Water	01/06/23 10:15	01/06/23 18:15

Eurofins Calscience Irvine

570-123038 Chain of Custody

CHAIN OF CUSTODY FORM

Loc: 570
123038

123038 112

Client Name/Address: Haley & Aldrich, 5333 Mission Center Rd Suite 300, San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc, 17461 Derian Ave Suite #100, Irvine CA 92614, Tel 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

ANALYSIS REQUIRED

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R/A: Total Dissolved Metals. (E200.7). As, Ba, B, Be, Co, Cr Fe, Mn, Ni, V Zn, Hardness as CaCO3 (E200.8) Ag, Cd, Cu, Pb, Sb, Se, Tl	R: Cyanide (SM4500-CN-E / E335.2)	R: Gross Alpha(E900.0) Gross Beta(E900.0) Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901 0 or E901 1)	R: Chronic Toxicity - Selenastrum	A: 1 4-Dioxane (E624 (SW8260M_SIM))	A: Total Organic Carbon (415.2 (SM 5310B))	A: Monomethyl hydrazine (SW8315M/DV-WC-0077)	A: Cr (VI), Total (E218.6)	R: Total Dissolved Metals. Mercury (E245.1)	QRSW: Chlorpyrifos, Diazinon (E525.2)	Comments
Outfall 018	Outfall018_20230106_Comp_F	1/6/2023 1015	WM	1 L Poly	1	None	190	No	X										Filter and preserve w/in 24hrs of receipt at lab.
			WM	borosilicate vials	1	None	320	No									X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230106_Comp	1/6/2023 1015	WM	500 mL Poly	1	NaOH	220	No		X									
			WM	2.5 Gal Cube	1	None	225	No		\	X								Unfiltered and unpreserved analysis, Separate RAD onto another workorder
			WM	1 L Glass Amber	1	None	230	No											Analyze duplicate, not MS/MSD.
			WM	1 Gal Cube	6	None	235	No				x							Only test if first or second rain events of the year. Deliver to ABC Labs [illegible]
			WM	40 mL VOA	3	HCl	240	No					X						
			WM	1 L Glass Amber	1	HCl	245	No						X					
			WM	8 oz. glass amber	1	H_2SO_4	255	No							X				
			WM	500 mL Poly	1	None	260	No								X			
			WM	1L Glass Amber	2	None	275	No										X	Extract [illegible] Weck Labs at Outfall 002, 011, or 018.
	Outfall018_20230106_Comp_Extra	1/6/2023 1015	WM	40 mL VOA	3	HCl	240	No					H						Hold
			WM	1 L Glass Amber	2	None	255	No							H				Hold

Legend A=Annual, R=Routine, QRSW=Quarterly Receiving Water

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-6-2023/1300	H&A	[signature]	1/6/23 1300 EC
[signature]	1/6/23 1815	EC	[signature]	1/6/23 1815 FC

Turn-around time (Check)
24 Hour ____ 72 Hour ____ 10 Day X
48 Hour ____ 5 Day ____ Normal: ____

Sample Integrity (Check)
Intact: ____ On Ice: ____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV ____ All Level IV: X

* Sampled hand delivered to ABC Labs on copied COC

1.7/17, 19/19, 21/21 Sc ll

2019-2020 Rainy Season
Version 5

2/6/2023

123038

2|2

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

									R/A	R	R	R	R/A	R	R	R	A	A	R					
									ANALYSIS REQUIRED															
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.7): As, Ba, B, Be, Co, Cr, Fe, Mn, Ni, V, Zn Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl [3]	TCDD (and all congeners) (E1613B) [4]	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc)) [5]	Surfactants (MBAS) (SM5540C/E425.1) [6]	Cl- F- SO4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300) [7]	Turbidity TDS (SM2540C/E180.1) [8]	TSS (160.2 (SM2540D)) [9]	Ammonia-N (E350.2) [10]	Priority Pollutants-Pesticides+PCBs (E608) [11]	Priority Pollutants-SVOCs (E625)	Total Recoverable Metals: Mercury (E245.1) [12]				Comments
Outfall 018	Outfall018_20230106_Comp	1/6/2023 1015	WM	500 mL Poly	1	HNO_3	80	No	X										X					
			WM	1 L Glass Amber	2	None	110	No		X														
			WM	1 L Poly	1	None	115	No			X													
			WM	500 mL Poly	2	None	120	No				X												
			WM	500 mL Poly	2	None	125	No					X											48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X										48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X								
			WM	1 L Glass Amber	2	None	250	No									X							
			WM	1 L Glass Amber	2	None	175	No										X						
			WM	1 L Poly	1	None	185	No							X									
	Outfall018_20230106_Comp_Extra	1/6/2023 1015	WM	1 L Glass Amber	2	None	110	No		H														Hold
			WM	500 mL Poly	2	None	120	No				H												Hold
			WM	500 mL Poly	2	None	125	No					H											Hold
			WM	1 L Glass Amber	2	None	250	No										H						Hold
			WM	1 L Glass Amber	2	None	175	No											H					Hold

Legend: A=Annual, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-6-2023/1300	H.A	[signature]	1/6/23 1300 EC
[signature]	1/6/23 1815	EC	[signature]	1/6/23 1815 EC

Turn-around time: (Check)
24 Hour _____ 72 Hour _____ 10 Day ___X___
48 Hour _____ 5 Day _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

1.7/1.7 1.9/1.9 2.1/2.1 SCH

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2019-2020 Rainy Season
Version 5

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-203552 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123038-5
Address: 13715 Rider Trail North,	Due Date Requested: 2/8/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B NaOH, C Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation Gross Alpha/Beta	906 0/LSC_Dist_Susp Tritium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230106_Comp (570-123038-2)	1/6/23	10 15 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/9/23 1420	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-203580 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123038-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/24/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall018_20230106_Comp (570-123038-2)	1/6/23	10 15 Pacific		Water			X		2	See QAS, Boeing_w/u to zero ug/L, Use Boeing glassware.
Outfall018_20230106_Comp_Extra (570-123038-3)	1/6/23	10 15 Pacific		Water				X	2	See QAS, Boeing_w/u to zero, ug/L, Use Boeing glassware

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/9/23 1552	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123038-2

Login Number: 123038
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123038-2

Login Number: 123038
List Number: 3
Creator: Guzman, Juan

List Source: Eurofins Sacramento
List Creation: 01/10/23 04:14 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.4c 1.7c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/3/2023 11:15:46 AM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 018 - COMP

JOB NUMBER

570-123038-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization

Virendra R Patil

Generated
2/3/2023 11:15:46 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123038-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123038-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123038-3

Comments
No additional comments.

Receipt
The samples were received on 1/6/2023 6:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.1º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Chronic-Selenestrum: This method was subcontracted to Aquatic Bioassay & Consulting. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method	Method Description	Protocol	Laboratory
EPA	Bioassay	EPA	Aquatic

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Aquatic = Aquatic Bioassay & Consulting, 29 North Olive Street, Ventura, CA 93001

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Job ID: 570-123038-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123038-2	Outfall018_20230106_Comp	Water	01/06/23 10:15	01/06/23 18:15

aquatic bioassay & consulting laboratories, inc

January 24, 2023

Mr. Virendra Patel
Eurofins Calscience
7440 Lincoln Way
Garden Grove, CA 92841-1432

Dear Mr. Patel:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA-821-R-02-013.* Results were as follows:

CLIENT:	Eurofins Calscience
SAMPLE I.D.:	Outfall 018
DATE RECEIVED:	6 Jan - 2023
ABC LAB. NO.:	CSE0123.034

CHRONIC SELENASTRUM ALGAE GROWTH BIOASSAY

IWC = 100.00 %

TST RESULT

GROWTH = PASS % EFFECT = -9.58 %

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 20 Jan-23 10:11 (p 1 of 1)
Test Code/ID: CSE0123.034 / 03-5265-1750

Selenastrum Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	02-5884-4804	Test Type:	Cell Growth	Analyst:	
Start Date:	06 Jan-23 15:33	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	10 Jan-23 14:00	Species:	Selenastrum capricornutum	Brine:	Not Applicable
Test Length:	94h	Taxon:	Chlorophyta	Source:	Aquatic Biosystems, CO Age: 7d
Sample ID:	00-7164-4121	Code:	CSE0123.034	Project:	Boeing-SSFL NPDES
Sample Date:	06 Jan-23 10:15	Material:	Sample Water	Source:	Bioassay Report
Receipt Date:	06 Jan-23 14:35	CAS (PC):		Station:	Outfall 018
Sample Age:	5h (0.3 °C)	Client:	Eurofins Calscience		

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
12-0044-2826	Cell Density	TST-Welch's t Test	<1.0E-05	100% passed cell density	1

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
12-0044-2826	Cell Density	Control CV	0.05842	<<	0.2	Yes	Passes Criteria
12-0044-2826	Cell Density	Control Resp	1.11E+6	1.00E+6	<<	Yes	Passes Criteria

Cell Density Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	8	1.113E+6	1.059E+6	1.168E+6	1.031E+6	1.209E+6	2.299E+4	6.503E+4	5.84%	0.00%
100		8	1.220E+6	1.176E+6	1.264E+6	1.151E+6	1.306E+6	1.871E+4	5.292E+4	4.34%	-9.58%

Cell Density Detail

MD5: A5E0D04B2DB0867822B8B6699A6D4BBB

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
0	N	1.088E+6	1.107E+6	1.033E+6	1.173E+6	1.166E+6	1.209E+6	1.031E+6	1.099E+6
100		1.151E+6	1.186E+6	1.306E+6	1.248E+6	1.179E+6	1.233E+6	1.270E+6	1.186E+6

CETIS Analytical Report

Report Date: 20 Jan-23 10:11 (p 1 of 2)
Test Code/ID: CSE0123.034 / 03-5265-1750

Selenastrum Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	12-0044-2826	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	20 Jan-23 10:10	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	20 Jan-23 10:09	**MD5 Hash:**	A5E0D04B2DB0867822B8B6699A6D4BBB	**Editor ID:**	009-702-627-3
Batch ID:	02-5884-4804	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	06 Jan-23 15:33	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	10 Jan-23 14:00	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Test Length:	94h	**Taxon:**	Chlorophyta	**Source:**	Aquatic Biosystems, CO **Age:** 7d
Sample ID:	00-7164-4121	**Code:**	CSE0123.034	**Project:**	Boeing-SSFL NPDES
Sample Date:	06 Jan-23 10:15	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	06 Jan-23 14:35	**CAS (PC):**		**Station:**	Outfall 018
Sample Age:	5h (0.3 °C)	**Client:**	Eurofins Calscience		

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	100% passed cell density endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(α:25%)
Negative Control		100*	13	15.13	0.6938	CDF	<1.0E-05	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.05842	<<	0.2	Yes	Passes Criteria
Control Resp	1.11E+6	1.00E+6	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	4.548E+10	4.548E+10	1	12.94	0.0029	Significant Effect
Error	4.921E+10	3.515E+09	14			
Total	9.468E+10		15			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Levene Equality of Variance Test	0.2811	8.862	0.6043	Equal Variances
	Mod Levene Equality of Variance Test	0.1424	8.862	0.7116	Equal Variances
	Variance Ratio F Test	1.51	8.885	0.5999	Equal Variances
Distribution	Anderson-Darling A2 Test	0.3188	3.878	0.5580	Normal Distribution
	D'Agostino Skewness Test	0.3509	2.576	0.7257	Normal Distribution
	Kolmogorov-Smirnov D Test	0.1218	0.2471	0.8650	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9494	0.8408	0.4806	Normal Distribution

Cell Density Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	8	1.113E+6	1.059E+6	1.168E+6	1.103E+6	1.031E+6	1.209E+6	2.299E+4	5.84%	0.00%
100		8	1.220E+6	1.176E+6	1.264E+6	1.202E+6	1.151E+6	1.306E+6	1.871E+4	4.34%	-9.58%

Cell Density Detail

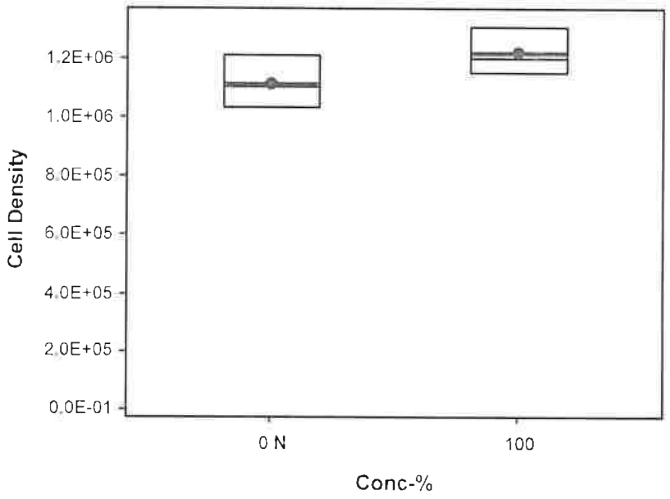
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
0	N	1.088E+6	1.107E+6	1.033E+6	1.173E+6	1.166E+6	1.209E+6	1.031E+6	1.099E+6
100		1.151E+6	1.186E+6	1.306E+6	1.248E+6	1.179E+6	1.233E+6	1.270E+6	1.186E+6

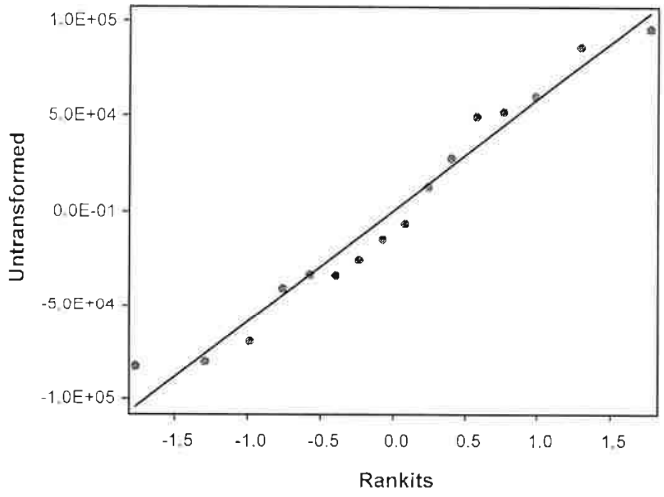
Selenastrum Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	12-0044-2826	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	20 Jan-23 10:10	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	20 Jan-23 10:09	**MD5 Hash:**	A5E0D04B2DB0867822B8B6699A6D4BBB	**Editor ID:**	009-702-627-3

Graphics





CETIS Measurement Report

Report Date: 20 Jan-23 10:11 (p 1 of 1)
Test Code/ID: CSE0123.034 / 03-5265-1750

Selenastrum Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	02-5884-4804	Test Type:	Cell Growth	Analyst:		
Start Date:	06 Jan-23 15:33	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water	
Ending Date:	10 Jan-23 14:00	Species:	Selenastrum capricornutum	Brine:	Not Applicable	
Test Length:	94h	Taxon:	Chlorophyta	Source:	Aquatic Biosystems, CO	Age: 7d
Sample ID:	00-7164-4121	Code:	CSE0123.034	Project:	Boeing-SSFL NPDES	
Sample Date:	06 Jan-23 10:15	Material:	Sample Water	Source:	Bioassay Report	
Receipt Date:	06 Jan-23 14:35	CAS (PC):		Station:	Outfall 018	
Sample Age:	5h (0.3 °C)	Client:	Eurofins Calscience			

Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	1	78	---	---	78	78	---	---	---	0
100		1	44	---	---	44	44	---	---	---	0
Overall		2	61	-155	277	44	78	17	24.04	39.41%	0 (0%)

Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	463.8	453.1	474.5	452	475	1.723	8.614	1.86%	0
100		5	571	567.8	574.2	569	575	0.5099	2.55	0.45%	0
Overall		10	517.4	476.8	558	452	575	17.97	56.82	10.98%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	1	115	---	---	115	115	---	---	---	0
100		1	130	---	---	130	130	---	---	---	0
Overall		2	122.5	27.2	217.8	115	130	7.5	10.61	8.66%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	7.64	7.529	7.751	7.5	7.7	0.01789	0.08944	1.17%	0
100		5	7.52	7.384	7.656	7.4	7.6	0.02191	0.1095	1.46%	0
Overall		10	7.58	7.499	7.661	7.4	7.7	0.0359	0.1135	1.50%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	25.62	25.29	25.95	25.2	25.8	0.05366	0.2683	1.05%	0
100		5	25.62	25.29	25.95	25.2	25.8	0.05366	0.2683	1.05%	0
Overall		10	25.62	25.44	25.8	25.2	25.8	0.08	0.253	0.99%	0 (0%)

CHAIN OF CUSTODY FORM

Client Name/Address:
Haley & Aldrich
5333 Mission Center Rd Suite 300
San Diego, CA 92108

Eurofins Calscience Irvine Contact: Christian Bondoc
17461 Derian Ave Suite #100
Irvine CA 92614
Tel: 949-260-3218

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22/TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Sampler: Adrian Mobeks

Project:
Boeing-SSFL NPDES
Permit 2023
Annual Outfall [001, 002, 011, 018]
Outfall 018
Comp

Project Manager: Katherine Miller
520.289.8606, 520.904.6944 (cell)
Field Manager: Mark Dominick
978.234.5033, 818.599.0702 (cell)

ANALYSIS REQUIRED

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R/A: Total Dissolved Metals (E200.7): As, Ba, B, Be, Co, Cr, Fe, Mn, Ni, V, Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	R: Cyanide (SM4500-CN-E / E335.2)	R: Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R: Chronic Toxicity - Selenastrum (EPA-821-R-02-013) [illegible]	A: 1,4-Dioxane (E624 (SW8260M_SIM))	A: Total Organic Carbon (415.2 (SM 5310B))	A: Monomethyl hydrazine (SW8315M/DV-WC-0077)	A: Cr (VI), Total (E218.6)	R: Total Dissolved Metals Mercury (E245.1)	QRSW: Chlorpyrifos, Diazinon (E525.2) [illegible]	Comments
Outfall 018	Outfall 018_20230106_Comp_F	1/6/2023 /1015	WM	1 L Poly	1	None	190	No	x										Filter and preserve w/in 24hrs of receipt at lab
			WM	borosilicate vials	1	None	320	No									x		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures
	Outfall018_20230106_Comp	1/6/2023 /1015	WM	500 mL Poly	1	NaOH	220	No		x									
			WM	2.5 Gal Cube	1	None	225	No			x								Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD
			WM	1 L Glass Amber	1	None	230	No											
			WM	1 Gal Cube	6	None	235	No				x							Only test if first or second rain events of the year [illegible]
			WM	40 mL VOA	3	HCl	240	No					x						
			WM	1 L Glass Amber	1	HCl	245	No						x					
			WM	8 oz glass amber	1	H_2SO_4	255	No							x				
			WM	500 mL Poly	1	None	280	No								x			
			WM	1L Glass Amber	2	None	275	No										x	[illegible]
	Outfall018_20230106_Comp_Extra	1/6/2023 /1015	WM	40 mL VOA	3	HCl	240	No					H						Hold
			WM	1 L Glass Amber	2	None	256	No							H				Hold

Legend: A=Annual, R=Routine, QRSW=Quarterly Receiving Water

Relinquished By	Date/Time	Company	Received By	Date/Time	
[signature]	1-6-2023/1435	H&A	[signature]	1-6-23 1435	Turn-around time: (Check) 24 Hour ___ 72 Hour ___ 10 Day _X_ 48 Hour ___ 5 Day ___ Normal ___
Relinquished By	Date/Time	Company	Received By	Date/Time	Sample Integrity: (Check) Intact: ___ On Ice: ___
Relinquished By	Date/Time	Company	Received By	Date/Time	Store samples for 6 months. Data Requirements: (Check) No Level IV: ___ All Level IV: _X_

* Samples hand delivered to ABC Labs on copied COC

Temp. deg. C = -0.34 0.3°C

Chlorine (mg/L) = <0.1

NH3 (mg/L) = <0.1

2019-2020 Rainy Season
Version 5

aquatic bioassay & consulting laboratories, inc

CHRONIC SELENASTRUM GROWTH BIOASSAY

DATE: 12 January - 2023

STANDARD TOXICANT: Cadmium Chloride

NOEC = 20.00 ug/l

IC25 = 53.36 ug/l
IC50 = 102.30 ug/l

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 20 Jan-23 16:52 (p 1 of 1)
Test Code/ID: SEL011223 / 04-7405-9726

Selenastrum Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	19-4179-0418	Test Type:	Cell Growth	Analyst:		
Start Date:	12 Jan-23 13:24	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water	
Ending Date:	16 Jan-23 13:10	Species:	Selenastrum capricornutum	Brine:	Not Applicable	
Test Length:	96h	Taxon:	Chlorophyta	Source:	Aquatic Biosystems, CO	Age: 7d
Sample ID:	01-0315-3386	Code:	SEL011223	Project:	REF TOX	
Sample Date:	12 Jan-23 13:24	Material:	Cadmium chloride	Source:	Reference Toxicant	
Receipt Date:		CAS (PC):		Station:	REF TOX	
Sample Age:	---	Client:	Internal Lab			

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	S
02-3719-8182	Cell Density	Dunnett Multiple Comparison Test		20	40	28.28	4.66%	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓	Level	µg/L	95% LCL	95% UCL	S
05-1997-3179	Cell Density	Linear Interpolation (ICPIN)		IC15	34.55	31.57	37.91	1
				IC20	39.4	35.65	48.58	
				IC25	53.36	40.71	62.3	
				IC40	88.59	84.67	92.36	
				IC50	102.3	99.22	105.6	

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
02-3719-8182	Cell Density	Control CV	0.03087	<<	0.2	Yes	Passes Criteria
05-1997-3179	Cell Density	Control CV	0.03087	<<	0.2	Yes	Passes Criteria
02-3719-8182	Cell Density	Control Resp	1.06E+6	1.00E+6	<<	Yes	Passes Criteria
05-1997-3179	Cell Density	Control Resp	1.06E+6	1.00E+6	<<	Yes	Passes Criteria

Cell Density Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	4	1.057E+6	1.005E+6	1.109E+6	1.033E+6	1.105E+6	1.631E+4	3.262E+4	3.09%	0.00%
20		4	1.091E+6	1.026E+6	1.156E+6	1.040E+6	1.131E+6	2.040E+4	4.080E+4	3.74%	-3.26%
40		4	8.525E+5	8.034E+5	9.016E+5	8.250E+5	8.890E+5	1.541E+4	3.083E+4	3.62%	19.33%
80		4	7.118E+5	6.788E+5	7.447E+5	6.940E+5	7.330E+5	1.035E+4	2.069E+4	2.91%	32.65%
140		4	2.412E+5	1.995E+5	2.830E+5	2.190E+5	2.790E+5	1.312E+4	2.623E+4	10.87%	77.17%
180		4	1.472E+5	1.228E+5	1.717E+5	1.320E+5	1.610E+5	7.696E+3	1.539E+4	10.45%	86.07%

Cell Density Detail

MD5: 8002C18F242E2CF77D044A91E3CE4461

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.045E+6	1.033E+6	1.044E+6	1.105E+6
20		1.131E+6	1.078E+6	1.116E+6	1.040E+6
40		8.670E+5	8.290E+5	8.250E+5	8.890E+5
80		6.940E+5	7.330E+5	6.940E+5	7.260E+5
140		2.190E+5	2.370E+5	2.300E+5	2.790E+5
180		1.360E+5	1.610E+5	1.600E+5	1.320E+5

CETIS Analytical Report

Selenastrum Growth Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	02-3719-8182	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	20 Jan-23 16:51	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Edit Date:	20 Jan-23 16:48	**MD5 Hash:**	8002C18F242E2CF77D044A91E3CE4461	**Editor ID:**	009-702-627-3
Batch ID:	19-4179-0418	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	12 Jan-23 13:24	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	16 Jan-23 13:10	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Test Length:	96h	**Taxon:**	Chlorophyta	**Source:**	Aquatic Biosystems, CO **Age:** 7d
Sample ID:	01-0315-3386	**Code:**	SEL011223	**Project:**	REF TOX
Sample Date:	12 Jan-23 13:24	**Material:**	Cadmium chloride	**Source:**	Reference Toxicant
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	Internal Lab		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Untransformed	C > T	20	40	28.28	---	49300	4.66%

Dunnett Multiple Comparison Test

Control	vs	Conc-µg/L	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(α:5%)
Negative Control		20	6	-1.685	2.407	49300	CDF	0.9976	Non-Significant Effect
		40*	6	9.973	2.407	49300	CDF	2.7E-05	Significant Effect
		80*	6	16.85	2.407	49300	CDF	2.7E-05	Significant Effect
		140*	6	39.82	2.407	49300	CDF	2.7E-05	Significant Effect
		180*	6	44.41	2.407	49300	CDF	2.7E-05	Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.03087	<<	0.2	Yes	Passes Criteria
Control Resp	1.06E+6	1.00E+6	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	3.272E+12	6.545E+11	5	780.2	<1.0E-05	Significant Effect
Error	1.51E+10	838820000	18			
Total	3.287E+12		23			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	2.884	15.09	0.7178	Equal Variances
	Levene Equality of Variance Test	1.242	4.248	0.3306	Equal Variances
	Mod Levene Equality of Variance Test	0.6992	4.248	0.6311	Equal Variances
Distribution	Anderson-Darling A2 Test	0.7994	3.878	0.0381	Normal Distribution
	D'Agostino Kurtosis Test	0.7357	2.576	0.4619	Normal Distribution
	D'Agostino Skewness Test	0.6079	2.576	0.5433	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	0.9108	9.21	0.6342	Normal Distribution
	Kolmogorov-Smirnov D Test	0.2114	0.2056	0.0070	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.9401	0.884	0.1636	Normal Distribution

Cell Density Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	1.057E+6	1.005E+6	1.109E+6	1.044E+6	1.033E+6	1.105E+6	1.631E+4	3.09%	0.00%
20		4	1.091E+6	1.026E+6	1.156E+6	1.097E+6	1.040E+6	1.131E+6	2.040E+4	3.74%	-3.26%
40		4	8.525E+5	8.034E+5	9.016E+5	8.480E+5	8.250E+5	8.890E+5	1.541E+4	3.62%	19.33%
80		4	7.118E+5	6.788E+5	7.447E+5	7.047E+5	6.940E+5	7.330E+5	1.035E+4	2.91%	32.65%
140		4	2.412E+5	1.995E+5	2.830E+5	2.335E+5	2.190E+5	2.790E+5	1.312E+4	10.87%	77.17%
180		4	1.472E+5	1.228E+5	1.717E+5	1.480E+5	1.320E+5	1.610E+5	7.696E+3	10.45%	86.07%

Selenastrum Growth Test

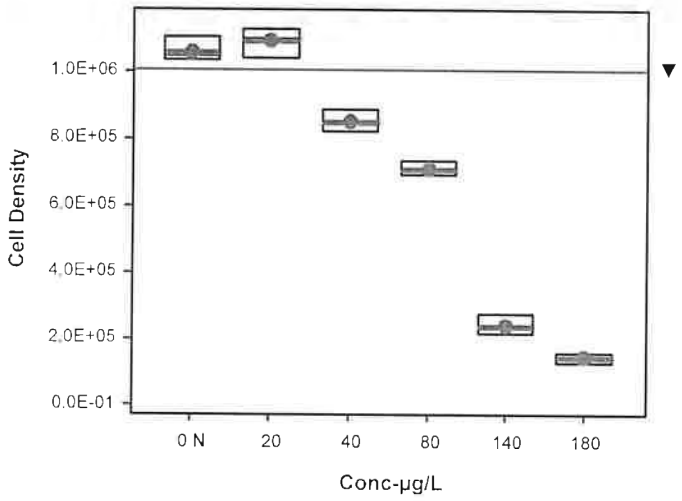
Aquatic Bioassay & Consulting Labs, Inc.

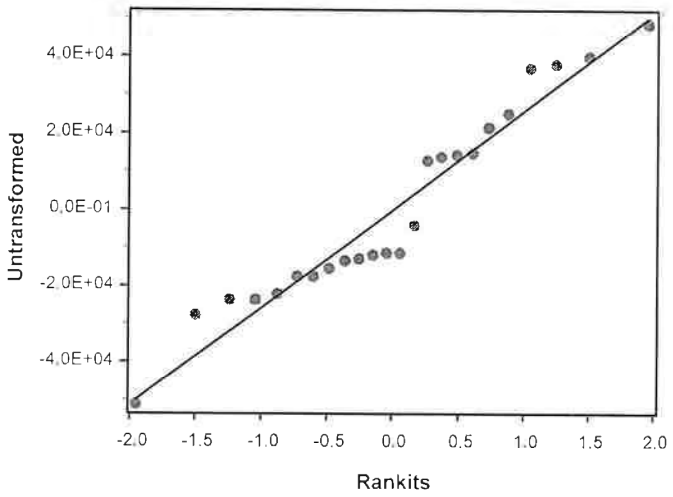
Analysis ID:	02-3719-8182	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	20 Jan-23 16:51	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Edit Date:	20 Jan-23 16:48	**MD5 Hash:**	8002C18F242E2CF77D044A91E3CE4461	**Editor ID:**	009-702-627-3

Cell Density Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.045E+6	1.033E+6	1.044E+6	1.105E+6
20		1.131E+6	1.078E+6	1.116E+6	1.040E+6
40		8.670E+5	8.290E+5	8.250E+5	8.890E+5
80		6.940E+5	7.330E+5	6.940E+5	7.260E+5
140		2.190E+5	2.370E+5	2.300E+5	2.790E+5
180		1.360E+5	1.610E+5	1.600E+5	1.320E+5

Graphics





CETIS Analytical Report

Report Date: 20 Jan-23 16:52 (p 1 of 2)
Test Code/ID: SEL011223 / 04-7405-9726

Selenastrum Growth Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	05-1997-3179	Endpoint:	Cell Density	CETIS Version:	CETISv2.1.4
Analyzed:	20 Jan-23 16:51	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Edit Date:	20 Jan-23 16:48	MD5 Hash:	8002C18F242E2CF77D044A91E3CE4461	Editor ID:	009-702-627-3
Batch ID:	19-4179-0418	Test Type:	Cell Growth	Analyst:	
Start Date:	12 Jan-23 13:24	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	16 Jan-23 13:10	Species:	Selenastrum capricornutum	Brine:	Not Applicable
Test Length:	96h	Taxon:	Chlorophyta	Source:	Aquatic Biosystems, CO Age: 7d
Sample ID:	01-0315-3386	Code:	SEL011223	Project:	REF TOX
Sample Date:	12 Jan-23 13:24	Material:	Cadmium chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	Internal Lab		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.03087	<<	0.2	Yes	Passes Criteria
Control Resp	1.06E+6	1.00E+6	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
IC15	34.55	31.57	37.91
IC20	39.4	35.65	48.58
IC25	53.36	40.71	62.3
IC40	88.59	84.67	92.36
IC50	102.3	99.22	105.6

Cell Density Summary

			Calculated Variate						Isotonic Variate	
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	4	1.057E+6	1.044E+6	1.033E+6	1.105E+6	3.09%	0.00%	1.074E+6	0.00%
20		4	1.091E+6	1.097E+6	1.040E+6	1.131E+6	3.74%	-3.26%	1.074E+6	0.00%
40		4	8.525E+5	8.480E+5	8.250E+5	8.890E+5	3.62%	19.33%	8.525E+5	20.62%
80		4	7.118E+5	7.047E+5	6.940E+5	7.330E+5	2.91%	32.65%	7.118E+5	33.72%
140		4	2.412E+5	2.335E+5	2.190E+5	2.790E+5	10.87%	77.17%	2.412E+5	77.54%
180		4	1.472E+5	1.480E+5	1.320E+5	1.610E+5	10.45%	86.07%	1.472E+5	86.29%

Cell Density Detail

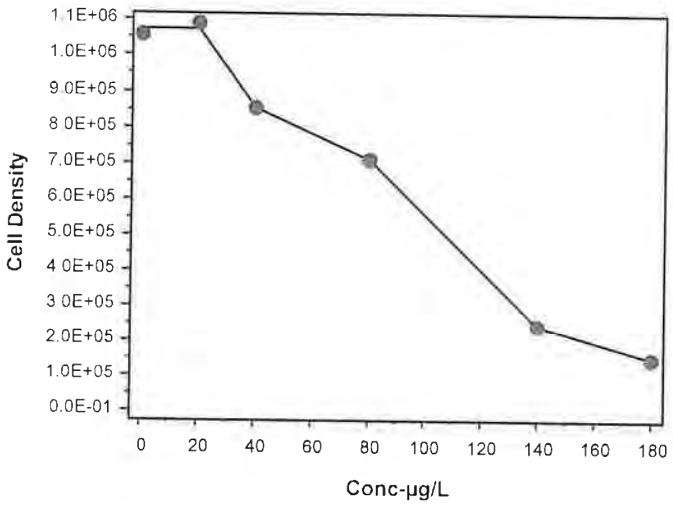
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.045E+6	1.033E+6	1.044E+6	1.105E+6
20		1.131E+6	1.078E+6	1.116E+6	1.040E+6
40		8.670E+5	8.290E+5	8.250E+5	8.890E+5
80		6.940E+5	7.330E+5	6.940E+5	7.260E+5
140		2.190E+5	2.370E+5	2.300E+5	2.790E+5
180		1.360E+5	1.610E+5	1.600E+5	1.320E+5

Selenastrum Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	05-1997-3179	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	20 Jan-23 16:51	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	20 Jan-23 16:48	**MD5 Hash:**	8002C18F242E2CF77D044A91E3CE4461	**Editor ID:**	009-702-627-3

Graphics



Selenastrum Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	19-4179-0418	Test Type:	Cell Growth	Analyst:			
Start Date:	12 Jan-23 13:24	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water		
Ending Date:	16 Jan-23 13:10	Species:	Selenastrum capricornutum	Brine:	Not Applicable		
Test Length:	96h	Taxon:	Chlorophyta	Source:	Aquatic Biosystems, CO	Age:	7d
Sample ID:	01-0315-3386	Code:	SEL011223	Project:	REF TOX		
Sample Date:	12 Jan-23 13:24	Material:	Cadmium chloride	Source:	Reference Toxicant		
Receipt Date:		CAS (PC):		Station:	REF TOX		
Sample Age:	---	Client:	Internal Lab				

Alkalinity (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	1	77	---	---	77	77	---	---	---	0
20		1	80	---	---	80	80	---	---	---	0
40		1	77	---	---	77	77	---	---	---	0
80		1	68	---	---	68	68	---	---	---	0
140		1	66	---	---	66	66	---	---	---	0
180		1	65	---	---	65	65	---	---	---	0
Overall		6	72.17	65.29	79.05	65	80	2.676	6.555	9.08%	0 (0%)

Conductivity-µmhos

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	497.6	487.7	507.5	489	510	1.591	7.956	1.60%	0
20		5	489.2	474.1	504.3	468	499	2.439	12.19	2.49%	0
40		5	453.6	434.3	472.9	445	481	3.104	15.52	3.42%	0
80		5	432.4	417.2	447.6	425	454	2.452	12.26	2.84%	0
140		5	407.8	390.9	424.7	400	432	2.722	13.61	3.34%	0
180		5	390.4	369.6	411.2	379	420	3.348	16.74	4.29%	0
Overall		30	445.2	429.5	460.8	379	510	7.646	41.88	9.41%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	1	118	---	---	118	118	---	---	---	0
20		1	110	---	---	110	110	---	---	---	0
40		1	125	---	---	125	125	---	---	---	0
80		1	95	---	---	95	95	---	---	---	0
140		1	98	---	---	98	98	---	---	---	0
180		1	93	---	---	93	93	---	---	---	0
Overall		6	106.5	92.63	120.4	93	125	5.396	13.22	12.41%	0 (0%)

pH-Units

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	7.96	7.849	8.071	7.8	8	0.01789	0.08944	1.12%	0
20		5	8	8	8	8	8	0	0	0.00%	0
40		5	8	8	8	8	8	0	0	0.00%	0
80		5	8	8	8	8	8	0	0	0.00%	0
140		5	7.98	7.924	8.036	7.9	8	0.008943	0.04472	0.56%	0
180		5	7.98	7.924	8.036	7.9	8	0.008943	0.04472	0.56%	0
Overall		30	7.987	7.97	8.003	7.8	8	0.007927	0.04342	0.54%	0 (0%)

Temperature-°C

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
20		5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
40		5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
80		5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
140		5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
180		5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
Overall		30	25.28	25.21	25.35	25	25.5	0.03601	0.1972	0.78%	0 (0%)

Eurofins Calscience Irvine

570-123038 Chain of Custody

Loc: 570
123038

123038

112

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich, 5333 Mission Center Rd Suite 300, San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc, 17461 Derian Ave Suite #100, Irvine CA 92614, Tel 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

ANALYSIS REQUIRED

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R/A: Total Dissolved Metals. (E200.7). As, Ba, B, Be, Co, Cr Fe, Mn, Ni, V Zn, Hardness as CaCO3 (E200.8) Ag, Cd, Cu, Pb, Sb, Se, Tl	R: Cyanide (SM4500-CN-E / E335.2)	R: Gross Alpha(E900.0) Gross Beta(E900.0) Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901 0 or E901 1)	R: Chronic Toxicity - Selenastrum	A: 1 4-Dioxane (E624 (SW8260M_SIM))	A: Total Organic Carbon (415.2 (SM 5310B))	A: Monomethyl hydrazine (SW8315M/DV-WC-0077)	A: Cr (VI), Total (E218.6)	R: Total Dissolved Metals. Mercury (E245.1)	QRSW: Chlorpyrifos, Diazinon (E525.2)	Comments
Outfall 018	Outfall018_20230106_Comp_F	1/6/2023 1015	WM	1 L Poly	1	None	190	No	X										Filter and preserve w/in 24hrs of receipt at lab.
			WM	borosilicate vials	1	None	320	No									X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230106_Comp	1/6/2023 1015	WM	500 mL Poly	1	NaOH	220	No		X									
			WM	2.5 Gal Cube	1	None	225	No		\	X								Unfiltered and unpreserved analysis, Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
			WM	1 L Glass Amber	1	None	230	No											
			WM	1 Gal Cube	6	None	235	No				x							Only test if first or second rain events of the year. Deliver to ABC Labs Ventura, CA
			WM	40 mL VOA	3	HCl	240	No					X						
			WM	1 L Glass Amber	1	HCl	245	No						X					
			WM	8 oz. glass amber	1	H_2SO_4	255	No							X				
			WM	500 mL Poly	1	None	260	No								X			
			WM	1L Glass Amber	2	None	275	No										X	Extract ... at Weck Labs at Outfall 002, 011, or 018.
	Outfall018_20230106_Comp_Extra	1/6/2023 1015	WM	40 mL VOA	3	HCl	240	No					H						Hold
			WM	1 L Glass Amber	2	None	255	No							H				Hold

Legend A=Annual, R=Routine, QRSW=Quarterly Receiving Water

Relinquished By	Date/Time:	Company	Received By	Date/Time:	
[signature]	1-6-2023/1300	H&A	[signature]	1/6/23 1300	EC
[signature]	1/6/23 1815	EC	[signature]	1/6/23 1815	EC

Turn-around time (Check)
24 Hour ______ 72 Hour ______ 10 Day X
48 Hour ______ 5 Day ______ Normal: ______

Sample Integrity (Check)
Intact: ______ On Ice: ______

Store samples for 6 months.
Data Requirements: (Check)
No Level IV ______ All Level IV: X

* Sampled hand delivered to ABC Labs on copied COC

1.7/17, 19/19, 21/21 Su ll

2/3/2023

2019-2020 Rainy Season
Version 5

123038

2/2

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

									R/A	R	R	R	R/A	R	R	R	A	A	R					
									ANALYSIS REQUIRED															
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.7): As, Ba, B, Be, Co, Cr, Fe, Mn, Ni, V, Zn Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl [3]	TCDD (and all congeners) (E1613B) [4]	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc)) [5]	Surfactants (MBAS) (SM5540C/E425.1) [6]	Cl- F- SO4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300) [7]	Turbidity TDS (SM2540C/E180.1) [8]	TSS (160.2 (SM2540D)) [9]	Ammonia-N (E350.2) [10]	Priority Pollutants-Pesticides+PCBs (E608) [11]	Priority Pollutants-SVOCs (E625)	Total Recoverable Metals: Mercury (E245.1) [12]				Comments
Outfall 018	Outfall018_20230106_Comp	1/6/2023 1015	WM	500 mL Poly	1	HNO_3	80	No	X										X					
			WM	1 L Glass Amber	2	None	110	No		X														
			WM	1 L Poly	1	None	115	No			X													
			WM	500 mL Poly	2	None	120	No				X												
			WM	500 mL Poly	2	None	125	No					X											48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X										48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X								
			WM	1 L Glass Amber	2	None	250	No									X							
			WM	1 L Glass Amber	2	None	175	No										X						
			WM	1 L Poly	1	None	185	No							X									
	Outfall018_20230106_Comp_Extra	1/6/2023 1015	WM	1 L Glass Amber	2	None	110	No		H														Hold
			WM	500 mL Poly	2	None	120	No				H												Hold
			WM	500 mL Poly	2	None	125	No					H											Hold
			WM	1 L Glass Amber	2	None	250	No										H						Hold
			WM	1 L Glass Amber	2	None	175	No											H					Hold

Legend: A=Annual, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-6-2023/1300	H&A	[signature]	1/6/23 1300 EC
[signature]	1/6/23 1815	EC	[signature]	1/6/23 1815 EC

Turn-around time: (Check)
24 Hour _____ 72 Hour _____ 10 Day ___X___
48 Hour _____ 5 Day _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

1.7/1.7 1.9/1.9 2.1/2.1 SCH

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2/3/2023

2019-2020 Rainy Season
Version 5

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-203552 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123038-5
Address: 13715 Rider Trail North,	Due Date Requested: 2/8/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B NaOH, C Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation Gross Alpha/Beta	906 0/LSC_Dist_Susp Tritium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230106_Comp (570-123038-2)	1/6/23	10 15 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/9/23 1420	EC			
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-203580 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123038-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/24/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall018_20230106_Comp (570-123038-2)	1/6/23	10 15 Pacific		Water			X		2	See QAS, Boeing_w/u to zero ug/L, Use Boeing glassware.
Outfall018_20230106_Comp_Extra (570-123038-3)	1/6/23	10 15 Pacific		Water				X	2	See QAS, Boeing_w/u to zero, ug/L, Use Boeing glassware

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/9/23 1552	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123038-3

Login Number: 123038
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/2/2023 2:08:12 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 018 - COMP

JOB NUMBER

570-123038-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization

Virendra R Patil

Generated
3/2/2023 2:08:12 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123038-4
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-4
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Job ID: 570-123038-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123038-4

Comments
No additional comments.

Receipt
The samples were received on 1/6/2023 6:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.1º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Methods Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units), Weck-Hydrazine: These methods were subcontracted to Weck Laboratories, Inc.. The subcontract laboratory certifications are different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-4
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method	Method Description	Protocol	Laboratory
Subcontract	Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units)	None	Weck Lab
Subcontract	Weck-Hydrazine	None	Weck Lab

Protocol References:

None = None

Laboratory References:

Weck Lab = Weck Laboratories, Inc., 14859 E. Clark Avenue, City of Industry, CA 91745

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Job ID: 570-123038-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123038-2	Outfall018_20230106_Comp	Water	01/06/23 10:15	01/06/23 18:15

WECK LABORATORIES, INC.

Certificate of Analysis

FINAL REPORT

Work Orders:	3A06118	**Report Date:**	2/24/2023
		Received Date:	1/6/2023
Project:	570-123038-4	**Turnaround Time:**	Normal
		Phones:	(949) 261-1022
		Fax:	(949) 260-3297
Attn:	Virendra Patel	**P.O. #:**	
Client:	Eurofins Calscience - Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780	**Billing Code:**	

Dear Virendra Patel,

Enclosed are the results of analyses for samples received 1/06/23 with the Chain-of-Custody document. The samples were received in good condition, at 1.1 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: Outfall018_20230106_Comp (570-123038-2) — Sampled: 01/06/23 10:15 by Client

3A06118-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 8315M			**Instr:** LCMS03				
Batch ID: W3A1773 **Preparation:** Microextraction			**Prepared:** 01/20/23 16:29				**Analyst:** pjs
Monomethylhydrazine (MMH)	ND	0.31	2.0	ug/l	1	01/20/23	P-2

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634

www.wecklabs.com

Quality Control Results

Hydrazine by LCMS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3A1773-BLK2)					**Prepared: 01/20/23 Analyzed: 01/23/23**						
Monomethylhydrazine (MMH)	ND	0.31	2.0	ug/l							QC-2
LCS (W3A1773-BS1)					**Prepared & Analyzed: 01/20/23**						
Monomethylhydrazine (MMH)	20.7	0.31	2.0	ug/l	20.0		103	50-150			
LCS (W3A1773-BS2)					**Prepared: 01/20/23 Analyzed: 01/23/23**						
Monomethylhydrazine (MMH)	27.6	0.31	2.0	ug/l	20.0		138	50-150			QC-2
Matrix Spike (W3A1773-MS1)	**Source: 3A06106-03**				**Prepared & Analyzed: 01/20/23**						
Monomethylhydrazine (MMH)	15.5	0.31	2.0	ug/l	20.0	*ND*	77	50-150			
Matrix Spike Dup (W3A1773-MSD1)	**Source: 3A06106-03**				**Prepared & Analyzed: 01/20/23**						
Monomethylhydrazine (MMH)	14.2	0.31	2.0	ug/l	20.0	*ND*	71	50-150	9	30	

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634

www.wecklabs.com

Notes and Definitions

Item	Definition
J	Estimated conc. detected <MRL and >MDL.
P-2	Sample received without proper preservation and was preserved at the lab upon receiving.
QC-2	This QC sample was reanalyzed to complement samples that require re-analysis on different date. See analysis date.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Analyses Accreditation Summary

Analyte	CAS #	Not By NELAP	ANAB ISO 17025
EPA 8315M in Water			
Monomethylhydrazine (MMH)	60-34-4	✓	

Reviewed by:

Tiffany T. Felix For Rahul R. Nair
Project Manager

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
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2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

3AO

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California	
Address: 14859 E. Clark Avenue, ,	Due Date Requested: 1/20/2023		
City: City of Industry	TAT Requested (days):		
State, Zip: CA, 91745			
Phone:	PO #:		
Email:	WO #:		
Project Name: Boeing SSFL NPDES - Outfall 018 - COMP	Project #: 44024446		
Site:	SSOW#:		

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (Weck-Hydrazine)/ Weck-Hydrazine (Hold)
			Preservation Code:					
Outfall018_20230106_Comp (570-123038-2)	1/6/23	10:15 Pacific		Water			X	
Outfall018_20230106_Comp_Extra (570-123038-3)	1/6/23	10:15 Pacific		Water				X

Analysis Requested

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under cha maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accred attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are r
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:
Empty Kit Relinquished by: Date:	Time: Method of Shipment:

ICOC No:
570-203425

Containers

Count	Container Type	Preservative
5	Amber Glass 1 liter - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
2	SUBCONTRACT	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Level IV needed
3	SUBCONTRACT	SUB (Weck-Hydrazine)/ Weck-Hydrazine (Hold)	Level IV needed

ORATORIES, INC.

Sample Receipt Checklist

Work WKO: 3A06118
Logged by: Jerico Bolotano
Checked by: Jerico Bolotano

Date/Time Received: 01/06/22 @ 16:45
# of Samples: 02
Delivered by: Client

sk	Yes	No	N/A	Comments
C present at receipt?	☒	☐		
C properly completed?	☒	☐		
C matches sample labels?	☒	☐		
	☐	☐		
ject Manager notified?	☐	☐	☒	
mple Temperature	1.1°C			
mples received on ice?	☒	☐		
e Type (Blue/Wet)	Wet			
samples intact?	☒	☐		
mples in proper containers?	☒	☐		
fficient sample volume?	☒	☐		
mples intact?	☒	☐		
ceived within holding time?	☒	☐		
	☐	☐		
ject Manager notified?	☐	☐	☒	
mple labels checked for correct preservation?	☒	☐	☐	
C Headspace: (No) none, If Yes (See comment) 4.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☐	☒	☐ <6mm/Pea size?
verified upon receipt?				pH paper Lot# 2071882
etals <2; H2SO4 pres tests <2; 522<4; TOC <2; 525.2<2; 1CO3<2; 608.3 5-9	☐	☐	☒	
lorine Tested <0.1	☒	☐	☐	Cl Test Strip Lot# 061221E
G pH <2 verified?	☐	☐	☐	pH paper Lot# pH Reading:
adjusted for O&G	☐	☐	☐	Acid Lot# Amt added:
ject Manager notified?	☐	☐	☐	

Eurofins Calscience Irvine

570-123038 Chain of Custody

CHAIN OF CUSTODY FORM

123038

Loc: 570

123038

1/2

Client Name/Address:	Project:
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

ANALYSIS REQUIRED

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R/A: Total Dissolved Metals. (E200.7): As, Ba, B, Be, Co, Cr Fe, Mn, Ni, V Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl	R: Cyanide (SM4500-CN-E / E335.2)	R: Gross Alpha(E900.0) Gross Beta(E900.0) Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901 0 or E901 1)	R: Chronic Toxicity - Selenastrum [illegible]	A: 1 4-Dioxane (E624 (SW8260M_SIM))	A: Total Organic Carbon (415.2 (SM 5310B))	A: Monomethyl hydrazine (SW8315M/DV-WC-0077)	A: Cr (VI), Total (E218.6)	R: Total Dissolved Metals. Mercury (E245.1)	QRSW: Chlorpyrifos, Diazinon (E525.2) [illegible]	Comments
Outfall 018	Outfall018_20230106_Comp_F	1/6/2023 1015	WM	1 L Poly	1	None	190	No	X										Filter and preserve w/in 24hrs of receipt at lab.
			WM	borosilicate vials	1	None	320	No									X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230106_Comp	1/6/2023 1015	WM	500 mL Poly	1	NaOH	220	No		X									
			WM	2.5 Gal Cube	1	None	225	No		\	X								Unfiltered and unpreserved analysis, Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
			WM	1 L Glass Amber	1	None	230	No											
			WM	1 Gal Cube	6	None	235	No				X							Only test if first or second rain events of the year [illegible] ABC Labs [illegible] *
			WM	40 mL VOA	3	HCl	240	No					X						
			WM	1 L Glass Amber	1	HCl	245	No						X					
			WM	8 oz. glass amber	1	H_2SO_4	255	No							X				
			WM	500 mL Poly	1	None	260	No								X			
			WM	1L Glass Amber	2	None	275	No										X	Extract [illegible] Weck Labs [illegible] or 018.
	Outfall018_20230106_Comp_Extra	1/6/2023 1015	WM	40 mL VOA	3	HCl	240	No					H						Hold
			WM	1 L Glass Amber	2	None	255	No							H				Hold

Legend A=Annual, R=Routine, QRSW=Quarterly Receiving Water

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-6-2023/1300	H&A	[signature]	1/6/23 1300 EC
[signature]	1/6/23 1815	EC	[signature]	1/6/23 1815 EC

Turn-around time (Check)
24 Hour: ______ 72 Hour: ______ 10 Day: __X__
48 Hour: ______ 5 Day: ______ Normal: ______

Sample Integrity: (Check)
Intact: ______ On Ice: ______
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: ______ All Level IV: __X__

* Sampled hand delivered to ABC Labs on copied COC

1.7/17, 19/19, 21/21 Sc11

2019-2020 Rainy Season
Version 5

123038

2|2

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

									R/A	R	R	R	R/A	R	R	R	A	A	R					
									ANALYSIS REQUIRED															
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.7): As, Ba, B, Be, Co, Cr, Fe, Mn, Ni, V, Zn Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl [3]	TCDD (and all congeners) (E1613B) [4]	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc)) [5]	Surfactants (MBAS) (SM5540C/E425.1) [6]	Cl- F- SO4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300) [7]	Turbidity TDS (SM2540C/E180.1) [8]	TSS (160.2 (SM2540D)) [9]	Ammonia-N (E350.2) [10]	Priority Pollutants-Pesticides+PCBs (E608) [11]	Priority Pollutants-SVOCs (E625)	Total Recoverable Metals: Mercury (E245.1) [12]				Comments
Outfall 018	Outfall018_20230106_Comp	1/6/2023 1015	WM	500 mL Poly	1	HNO_3	80	No	X										X					
			WM	1 L Glass Amber	2	None	110	No		X														
			WM	1 L Poly	1	None	115	No			X													
			WM	500 mL Poly	2	None	120	No				X												
			WM	500 mL Poly	2	None	125	No					X											48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X										48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X								
			WM	1 L Glass Amber	2	None	250	No									X							
			WM	1 L Glass Amber	2	None	175	No										X						
			WM	1 L Poly	1	None	185	No							X									
	Outfall018_20230106_Comp_Extra	1/6/2023 1015	WM	1 L Glass Amber	2	None	110	No		H														Hold
			WM	500 mL Poly	2	None	120	No				H												Hold
			WM	500 mL Poly	2	None	125	No					H											Hold
			WM	1 L Glass Amber	2	None	250	No										H						Hold
			WM	1 L Glass Amber	2	None	175	No											H					Hold

Legend: A=Annual, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-6-2023/1300	H.A	[signature]	1/6/23 1300 EC
[signature]	1/6/23 1815	EC	[signature]	1/6/23 1815 EC

Turn-around time: (Check)
24 Hour _____ 72 Hour _____ 10 Day __X__
48 Hour _____ 5 Day _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

1.7/1.7 1.9/1.9 2.1/2.1 SCH

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3/2/2023

2019-2020 Rainy Season
Version 5

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-203552 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123038-5
Address: 13715 Rider Trail North,	Due Date Requested: 2/8/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B NaOH, C Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation Gross Alpha/Beta	906 0/LSC_Dist_Susp Tritium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901 1_Cs/Fill_Geo_0 K-40 and Caesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230106_Comp (570-123038-2)	1/6/23	10 15 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/9/23 1420	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

3/2/2023

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-203580 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123038-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/24/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall018_20230106_Comp (570-123038-2)	1/6/23	10 15 Pacific		Water			X		2	See QAS, Boeing_w/u to zero ug/L, Use Boeing glassware.
Outfall018_20230106_Comp_Extra (570-123038-3)	1/6/23	10 15 Pacific		Water				X	2	See QAS, Boeing_w/u to zero, ug/L, Use Boeing glassware

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/9/23 1552	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

3/2/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123038-4

Login Number: 123038
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 018 - COMP

JOB NUMBER

570-123038-5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

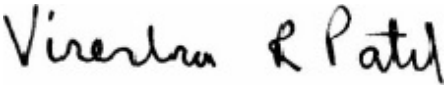
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123038-5
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Qualifiers

Rad

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123038-5

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123038-5

Comments
No additional comments.

Receipt
The samples were received on 1/6/2023 6:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.1º C.

Receipt Exceptions

The reference method requires samples to be preserved to a pH of <2 SU. The following samples were received with insufficient preservation at a pH of >2 SU: Outfall018_20230106_Comp_F (570-123038-1), Outfall018_20230106_Comp (570-123038-2) and Outfall018_20230106_Comp_Extra (570-123038-3). 570-123038-AC-2. The sample was preserved to the appropriate pH in the laboratory.

RAD
Method 900.0: Gross Alpha Beta prep batch 160-597281:

The matrix spike (MS) recoveries for gross alpha were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits. (570-123038-A-2-E MS)

Method 900.0: Gross Alpha Beta prep batch 160-597281:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall018_20230106_Comp (570-123038-2), (LCS 160-597281/2-A), (LCSB 160-597281/3-A), (MB 160-597281/1-A), (570-123038-A-2-G DU), (570-123038-A-2-E MS) and (570-123038-A-2-F MSBT)

Method 901.1: Gamma Prep Batch 160-596761
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211

Job ID: 570-123038-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

Bi-214 Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Outfall018_20230106_Comp (570-123038-2), (570-122687-U-1-D) and (570-122687-U-1-J DU)

Methods 903.0, 9315: Radium-226 batch 596421
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230106_Comp (570-123038-2), (LCS 160-596421/2-A), (LCSD 160-596421/3-A) and (MB 160-596421/1-A)

Methods 904.0, 9320: Radium-228 prep batch 160-596471:

The Ra-228 laboratory control sample (LCS) associated with the following samples recovered at 128%: (LCS 160-596471/2-A). The limits in our LIMS system at (75-125%) reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS is within criteria and no further action is required.

Methods 904.0, 9320: Radium-228 prep batch 160-596471:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall018_20230106_Comp (570-123038-2), (LCS 160-596471/2-A), (LCSD 160-596471/3-A) and (MB 160-596471/1-A)

Method 904.0: Radium-228 prep batch 160-596471:

The detection goal was not met for the following sample(s). The samples and batch QC were prepped at full volume. Matrix interferences are suspected because the method blank achieved the detection goal demonstrating acceptable sample preparation and instrument performance: Outfall018_20230106_Comp (570-123038-2). Analytical results are reported with the detection limit achieved.

Method 905: Strontium-90 prep batch 160-596746:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall018_20230106_Comp (570-123038-2), (LCS 160-596746/2-A), (LCSD 160-596746/3-A), (MB 160-596746/1-A) and (570-122687-U-1-C)

Method 906.0: Tritium 597488
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall018_20230106_Comp (570-123038-2), (LCS 160-597488/2-A), (MB 160-597488/1-A), (570-123038-U-2-C DU), (570-123414-Q-1-B) and (570-123414-Q-1-C MS)

Method A-01-R: Isotopic Uranium batch 597259
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230106_Comp (570-123038-2), (LCS 160-597259/2-A), (MB 160-597259/1-A) and (570-123038-A-2-C DU)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-5
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Client Sample ID: Outfall018_20230106_Comp
Lab Sample ID: 570-123038-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-5
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: Outfall018_20230106_Comp
Date Collected: 01/06/23 10:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123038-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	1.45	U	1.35	1.36	3.00	2.12	pCi/L	01/18/23 10:03	02/02/23 18:51	1
Gross Beta	**2.09**		0.704	0.735	4.00	0.911	pCi/L	01/18/23 10:03	02/02/23 18:51	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-5
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: Outfall018_20230106_Comp
Date Collected: 01/06/23 10:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123038-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	3.70	U	6.82	6.83	20.0	8.23	pCi/L	01/12/23 14:42	02/02/23 21:56	1
Potassium-40	1.92	U	60.8	60.8		103	pCi/L	01/12/23 14:42	02/02/23 21:56	1

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: Outfall018_20230106_Comp **Lab Sample ID: 570-123038-2**
Date Collected: 01/06/23 10:15 **Matrix: Water**
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.116	U	0.0937	0.0943	1.00	0.137	pCi/L	01/11/23 09:34	02/02/23 09:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*58.1*		*40 - 110*	*01/11/23 09:34*	*02/02/23 09:48*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: Outfall018_20230106_Comp
Date Collected: 01/06/23 10:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123038-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.511	U G	0.533	0.535	1.00	1.11	pCi/L	01/11/23 10:20	01/20/23 12:15	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*58.1*		*40 - 110*	*01/11/23 10:20*	*01/20/23 12:15*	*1*
Y Carrier	*76.6*		*40 - 110*	*01/11/23 10:20*	*01/20/23 12:15*	*1*

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: Outfall018_20230106_Comp **Lab Sample ID: 570-123038-2**
Date Collected: 01/06/23 10:15 **Matrix: Water**
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.0687	U	0.164	0.164	3.00	0.311	pCi/L	01/12/23 11:13	01/27/23 18:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*86.7*		*40 - 110*	*01/12/23 11:13*	*01/27/23 18:51*	*1*
Y Carrier	*87.5*		*40 - 110*	*01/12/23 11:13*	*01/27/23 18:51*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-5
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: Outfall018_20230106_Comp
Lab Sample ID: 570-123038-2
Date Collected: 01/06/23 10:15
Matrix: Water
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-83.3	U	157	157	500	307	pCi/L	01/19/23 12:02	01/20/23 22:39	1

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: Outfall018_20230106_Comp
Lab Sample ID: 570-123038-2
Date Collected: 01/06/23 10:15
Matrix: Water
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.128		0.1159	0.1161	1.00	0.112	pCi/L	01/17/23 16:09	01/25/23 14:42	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*87.9*		*30 - 110*	*01/17/23 16:09*	*01/25/23 14:42*	*1*

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-5
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
570-123038-2	Outfall018_20230106_Comp	58.1
LCS 160-596421/2-A	Lab Control Sample	91.6
LCSD 160-596421/3-A	Lab Control Sample Dup	99.4
MB 160-596421/1-A	Method Blank	97.5

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-123038-2	Outfall018_20230106_Comp	58.1	76.6
LCS 160-596471/2-A	Lab Control Sample	91.6	77.0
LCSD 160-596471/3-A	Lab Control Sample Dup	99.4	84.1
MB 160-596471/1-A	Method Blank	97.5	82.6

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-123038-2	Outfall018_20230106_Comp	86.7	87.5
LCS 160-596746/2-A	Lab Control Sample	88.4	89.0
LCSD 160-596746/3-A	Lab Control Sample Dup	85.9	91.6
MB 160-596746/1-A	Method Blank	87.7	74.4

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-123038-2	Outfall018_20230106_Comp	87.9
570-123038-2 DU	Outfall018_20230106_Comp	86.2
LCS 160-597259/2-A	Lab Control Sample	87.1
MB 160-597259/1-A	Method Blank	85.3

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-597281/1-A
Matrix: Water
Analysis Batch: 598871

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597281

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.3178	U	0.498	0.499	3.00	0.856	pCi/L	01/18/23 10:03	02/01/23 19:04	1
Gross Beta	-0.4920	U	0.450	0.452	4.00	0.892	pCi/L	01/18/23 10:03	02/01/23 19:04	1

Lab Sample ID: LCS 160-597281/2-A
Matrix: Water
Analysis Batch: 598871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597281

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	47.50		7.10	3.00	2.60	pCi/L	94	75 - 125

Lab Sample ID: LCSB 160-597281/3-A
Matrix: Water
Analysis Batch: 598871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597281

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.7	65.09		7.04	4.00	0.936	pCi/L	88	75 - 125

Lab Sample ID: 570-123038-2 MS
Matrix: Water
Analysis Batch: 599058

Client Sample ID: Outfall018_20230106_Comp
Prep Type: Total/NA
Prep Batch: 597281

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	1.45	U	50.5	20.83	F1	3.86	3.00	1.88	pCi/L	38	60 - 140

Lab Sample ID: 570-123038-2 MSBT
Matrix: Water
Analysis Batch: 599058

Client Sample ID: Outfall018_20230106_Comp
Prep Type: Total/NA
Prep Batch: 597281

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	2.09		73.7	68.81		7.42	4.00	0.924	pCi/L	91	60 - 140

Lab Sample ID: 570-123038-2 DU
Matrix: Water
Analysis Batch: 599058

Client Sample ID: Outfall018_20230106_Comp
Prep Type: Total/NA
Prep Batch: 597281

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	1.45	U	1.117	U	1.34	3.00	2.19	pCi/L	0.12	1
Gross Beta	2.09		2.039		0.737	4.00	0.937	pCi/L	0.03	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-596761/1-A
Matrix: Water
Analysis Batch: 598464

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596761

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	0.3405	U	6.22	6.22	20.0	7.49	pCi/L	01/12/23 14:04	01/27/23 09:19	1
Potassium-40	-26.73	U	74.0	74.1		112	pCi/L	01/12/23 14:04	01/27/23 09:19	1

Lab Sample ID: LCS 160-596761/2-A
Matrix: Water
Analysis Batch: 598468

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596761

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	135600		15900		323	pCi/L	100	75 - 125
Cesium-137	41000	41980		4940	20.0	82.6	pCi/L	102	75 - 125
Cobalt-60	18200	18860		2220		68.1	pCi/L	104	75 - 125

Lab Sample ID: 570-122687-U-1-J DU
Matrix: Water
Analysis Batch: 598468

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 596761

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	2.96	U	4.522	U	4.76	20.0	5.51	pCi/L	0.15	1
Potassium-40	-80.4	U	23.29	U	81.8		108	pCi/L	0.54	1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-596421/1-A
Matrix: Water
Analysis Batch: 599059

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596421

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02900	U	0.0421	0.0422	1.00	0.0719	pCi/L	01/11/23 09:34	02/02/23 09:40	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.5*		*40 - 110*	*01/11/23 09:34*	*02/02/23 09:40*	*1*

Lab Sample ID: LCS 160-596421/2-A
Matrix: Water
Analysis Batch: 599059

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596421

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	10.48		1.08	1.00	0.0823	pCi/L	92	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*91.6*		*40 - 110*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-596421/3-A
Matrix: Water
Analysis Batch: 599059

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 596421

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	10.98		1.12	1.00	0.0883	pCi/L	97	75 - 125	0.23	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*99.4*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-596471/1-A
Matrix: Water
Analysis Batch: 597712

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596471

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.04645	U	0.259	0.259	1.00	0.502	pCi/L	01/11/23 10:20	01/20/23 12:06	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.5*		*40 - 110*	*01/11/23 10:20*	*01/20/23 12:06*	*1*
Y Carrier	*82.6*		*40 - 110*	*01/11/23 10:20*	*01/20/23 12:06*	*1*

Lab Sample ID: LCS 160-596471/2-A
Matrix: Water
Analysis Batch: 597712

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596471

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.26	10.58		1.44	1.00	0.643	pCi/L	128	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*91.6*		*40 - 110*
Y Carrier	*77.0*		*40 - 110*

Lab Sample ID: LCSD 160-596471/3-A
Matrix: Water
Analysis Batch: 597712

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 596471

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.26	9.293		1.25	1.00	0.462	pCi/L	112	75 - 125	0.48	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*99.4*		*40 - 110*
Y Carrier	*84.1*		*40 - 110*

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-596746/1-A
Matrix: Water
Analysis Batch: 598557

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596746

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.1133	U	0.196	0.196	3.00	0.373	pCi/L	01/12/23 11:13	01/27/23 18:47	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*87.7*		*40 - 110*	*01/12/23 11:13*	*01/27/23 18:47*	*1*
Y Carrier	*74.4*		*40 - 110*	*01/12/23 11:13*	*01/27/23 18:47*	*1*

Lab Sample ID: LCS 160-596746/2-A
Matrix: Water
Analysis Batch: 598557

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596746

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.38	7.183		0.793	3.00	0.290	pCi/L	97	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*88.4*		*40 - 110*
Y Carrier	*89.0*		*40 - 110*

Lab Sample ID: LCSD 160-596746/3-A
Matrix: Water
Analysis Batch: 598557

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 596746

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.38	6.876		0.769	3.00	0.301	pCi/L	93	75 - 125	0.20	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*85.9*		*40 - 110*
Y Carrier	*91.6*		*40 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-597488/1-A
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597488

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-84.68	U	164	165	500	326	pCi/L	01/19/23 12:02	01/20/23 20:22	1

Lab Sample ID: LCS 160-597488/2-A
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597488

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2120	1848		381	500	324	pCi/L	87	75 - 125		

Method: 906.0 - Tritium, Total (LSC) (Continued)

Lab Sample ID: 570-123414-Q-1-C MS
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 597488

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium	-26.1	U	2120	1947		376	500	297	pCi/L	92	60 - 140		

Lab Sample ID: 570-123038-2 DU
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Outfall018_20230106_Comp
Prep Type: Total/NA
Prep Batch: 597488

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Tritium	-83.3	U		-97.75	U	162	500	324	pCi/L			0.05	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-597259/1-A
Matrix: Water
Analysis Batch: 598217

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597259

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.05873	U	0.09433	0.09455	1.00	0.172	pCi/L	01/17/23 16:09	01/25/23 14:42	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*85.3*		*30 - 110*	*01/17/23 16:09*	*01/25/23 14:42*	*1*

Lab Sample ID: LCS 160-597259/2-A
Matrix: Water
Analysis Batch: 598218

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597259

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	12.19		1.46	1.00	0.151	pCi/L	96	75 - 125		
Uranium-238			13.0	13.33		1.56	1.00	0.135	pCi/L	102	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*87.1*		*30 - 110*

Lab Sample ID: 570-123038-2 DU
Matrix: Water
Analysis Batch: 598230

Client Sample ID: Outfall018_20230106_Comp
Prep Type: Total/NA
Prep Batch: 597259

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Total Uranium	0.128			0.07847	U	0.1118	1.00	0.163	pCi/L			0.22	1

Tracer	*DU %Yield*	*DU Qualifier*	*Limits*
Uranium-232	*86.2*		*30 - 110*

Rad

Prep Batch: 596421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	PrecSep-21	
MB 160-596421/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-596421/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-596421/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 596471

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	PrecSep_0	
MB 160-596471/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-596471/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-596471/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 596746

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	PrecSep-7	
MB 160-596746/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-596746/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-596746/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 596761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	Fill_Geo-0	
MB 160-596761/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-596761/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-122687-U-1-J DU	Duplicate	Total/NA	Water	Fill_Geo-0	

Prep Batch: 597259

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	ExtChrom	
MB 160-597259/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-597259/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-123038-2 DU	Outfall018_20230106_Comp	Total/NA	Water	ExtChrom	

Prep Batch: 597281

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	Evaporation	
MB 160-597281/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-597281/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-597281/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-123038-2 MS	Outfall018_20230106_Comp	Total/NA	Water	Evaporation	
570-123038-2 MSBT	Outfall018_20230106_Comp	Total/NA	Water	Evaporation	
570-123038-2 DU	Outfall018_20230106_Comp	Total/NA	Water	Evaporation	

Prep Batch: 597488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123038-2	Outfall018_20230106_Comp	Total/NA	Water	LSC_Dist_Susp	
MB 160-597488/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-597488/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
570-123414-Q-1-C MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
570-123038-2 DU	Outfall018_20230106_Comp	Total/NA	Water	LSC_Dist_Susp	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-5
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Client Sample ID: Outfall018_20230106_Comp
Lab Sample ID: 570-123038-2
Date Collected: 01/06/23 10:15
Matrix: Water
Date Received: 01/06/23 18:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Evaporation			199.99 mL	1.0 g	597281	01/18/23 10:03	MST	EET SL
Total/NA	Analysis	900.0		1			599058	02/02/23 18:51	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	596761	01/12/23 14:42	SAC	EET SL
Total/NA	Analysis	901.1		1			599054	02/02/23 21:56	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	PrecSep-21			992.20 mL	1.0 g	596421	01/11/23 09:34	DJP	EET SL
Total/NA	Analysis	903.0		1			598940	02/02/23 09:48	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			992.20 mL	1.0 g	596471	01/11/23 10:20	DJP	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	597614	01/20/23 12:15	SCB	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep-7			1000.58 mL	1.0 g	596746	01/12/23 11:13	DJP	EET SL
Total/NA	Analysis	905		1			598557	01/27/23 18:51	SCB	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	LSC_Dist_Susp			100.20 mL	1.0 g	597488	01/19/23 12:02	ZR	EET SL
Total/NA	Analysis	906.0		1			597784	01/20/23 22:39	REV	EET SL
	Instrument ID: LSCAQUA									
Total/NA	Prep	ExtChrom			501.14 mL	1.0 mL	597259	01/17/23 16:09	SAC	EET SL
Total/NA	Analysis	A-01-R		1			598229	01/25/23 14:42	FLC	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 570-123038-5
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-5
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy
EPA = US Environmental Protection Agency
None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123038-5
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123038-2	Outfall018_20230106_Comp	Water	01/06/23 10:15	01/06/23 18:15

Eurofins Calscience Irvine

570-123038 Chain of Custody

CHAIN OF CUSTODY FORM

Loc: 570
123038

123038 112

Client Name/Address:	Project:
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

ANALYSIS REQUIRED

Analyses:
1. (R/A) Total Dissolved Metals. (E200.7): As, Ba, B, Be, Co, Cr, Fe, Mn, Ni, V, Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl
2. (R) Cyanide (SM4500-CN-E / E335.2)
3. (R) Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)
4. (R) Chronic Toxicity - Selenastrum
5. (A) 1,4-Dioxane (E624 (SW8260M_SIM))
6. (A) Total Organic Carbon (415.2 (SM 5310B))
7. (A) Monomethyl hydrazine (SW8315M/DV-WC-0077)
8. (A) Cr (VI), Total (E218.6)
9. (R) Total Dissolved Metals. Mercury (E245.1)
10. (QRSW) Chlorpyrifos, Diazinon (E525.2)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	1	2	3	4	5	6	7	8	9	10	Comments
Outfall 018	Outfall018_20230106_Comp_F	1/6/2023 1015	WM	1 L Poly	1	None	190	No	X										Filter and preserve w/in 24hrs of receipt at lab.
			WM	borosilicate vials	1	None	320	No									X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230106_Comp	1/6/2023 1015	WM	500 mL Poly	1	NaOH	220	No		X									
			WM	2.5 Gal Cube	1	None	225	No		\	X								Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
			WM	1 L Glass Amber	1	None	230	No											
			WM	1 Gal Cube	6	None	235	No				X							Only test if first or second rain events of the year. * Deliver to ABC Labs
			WM	40 mL VOA	3	HCl	240	No					X						
			WM	1 L Glass Amber	1	HCl	245	No						X					
			WM	8 oz. glass amber	1	H_2SO_4	255	No							X				
			WM	500 mL Poly	1	None	260	No								X			
			WM	1L Glass Amber	2	None	275	No										X	Extract ... at Weck Labs ... 018.
	Outfall018_20230106_Comp_Extra	1/6/2023 1015	WM	40 mL VOA	3	HCl	240	No					H						Hold
			WM	1 L Glass Amber	2	None	255	No							H				Hold

Legend A=Annual, R=Routine, QRSW=Quarterly Receiving Water

Relinquished By	Date/Time:	Company	Received By	Date/Time:
[signature]	1-6-2023/1300	H&A	[signature]	1/6/23 1300 EC
[signature]	1/6/23 1815	EC	[signature]	1/6/23 1815 EC

Turn-around time (Check)
24 Hour ______ 72 Hour ______ 10 Day X
48 Hour ______ 5 Day ______ Normal: ______

Sample Integrity (Check)
Intact: ______ On Ice: ______

Store samples for 6 months.

Data Requirements: (Check)
No Level IV ______ All Level IV: X

* Sampled hand delivered to ABC Labs on copied COC

1.7/17, 19/19, 21/21 Sc 11

2019-2020 Rainy Season
Version 5

2/7/2023

123038

2|2

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

									R/A	R	R	R	R/A	R	R	R	A	A	R					
									ANALYSIS REQUIRED															
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.7): As, Ba, B, Be, Co, Cr, Fe, Mn, Ni, V, Zn Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl [3]	TCDD (and all congeners) (E1613B) [4]	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc)) [5]	Surfactants (MBAS) (SM5540C/E425.1) [6]	Cl- F- SO4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300) [7]	Turbidity TDS (SM2540C/E180.1) [8]	TSS (160.2 (SM2540D)) [9]	Ammonia-N (E350.2) [10]	Priority Pollutants-Pesticides+PCBs (E608) [11]	Priority Pollutants-SVOCs (E625)	Total Recoverable Metals: Mercury (E245.1) [12]				Comments
Outfall 018	Outfall018_20230106_Comp	1/6/2023 1015	WM	500 mL Poly	1	HNO_3	80	No	X										X					
			WM	1 L Glass Amber	2	None	110	No		X														
			WM	1 L Poly	1	None	115	No			X													
			WM	500 mL Poly	2	None	120	No				X												
			WM	500 mL Poly	2	None	125	No					X											48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X										48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X								
			WM	1 L Glass Amber	2	None	250	No									X							
			WM	1 L Glass Amber	2	None	175	No										X						
			WM	1 L Poly	1	None	185	No							X									
	Outfall018_20230106_Comp_Extra	1/6/2023 1015	WM	1 L Glass Amber	2	None	110	No		H														Hold
			WM	500 mL Poly	2	None	120	No				H												Hold
			WM	500 mL Poly	2	None	125	No					H											Hold
			WM	1 L Glass Amber	2	None	250	No										H						Hold
			WM	1 L Glass Amber	2	None	175	No											H					Hold

Legend: A=Annual, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-6-2023/1300	H.A	[signature]	1/6/23 1300 EC
[signature]	1/6/23 1815	EC	[signature]	1/6/23 1815 EC

Turn-around time: (Check)
24 Hour _____ 72 Hour _____ 10 Day __X__
48 Hour _____ 5 Day _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

1 2/1.7 1.9/1.9 2 1/2.1 SC11

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2/7/2023

2019-2020 Rainy Season
Version 5

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-203552 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123038-5
Address: 13715 Rider Trail North,	Due Date Requested: 2/8/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B NaOH, C Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation Gross Alpha/Beta	906 0/LSC_Dist_Susp Tritium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230106_Comp (570-123038-2)	1/6/23	10 15 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/9/23 1420	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-203580 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123038-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/24/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - COMP	Project #: 44024446			
Site:	SSOW#:			

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall018_20230106_Comp (570-123038-2)	1/6/23	10 15 Pacific		Water			X		2	See QAS, Boeing_w/u to zero ug/L, Use Boeing glassware.
Outfall018_20230106_Comp_Extra (570-123038-3)	1/6/23	10 15 Pacific		Water				X	2	See QAS, Boeing_w/u to zero, ug/L, Use Boeing glassware

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/9/23 1552	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203552.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123038-5
Address: 13715 Rider Trail North,	Due Date Requested: 2/8/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - COMP	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	906.0/LSC_Dist_Susp Tritium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230106_Comp (570-123038-2)	1/6/23	10:15 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: [signature] FED EX	Date/Time: 1/9/23 1420	Company: EC	Received by: FED EX
Relinquished by:	Date/Time:	Company	Received by: [signature]
Relinquished by:	Date/Time:	Company	Received by:

Date/Time	Company
Date/Time: JAN 10 2023 0846	Company: ETAS
Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123038-5

Login Number: 123038
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123038-5

Login Number: 123038
List Number: 2
Creator: Bohlmann, Jessica M

List Source: Eurofins St. Louis
List Creation: 01/10/23 12:51 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	False	570-123038-AC-2 was received with a pH >2 SU.
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/11/2023 3:55:23 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 018 - COMP

JOB NUMBER

570-123038-6

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

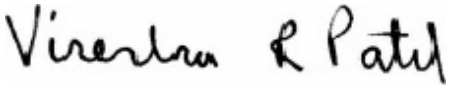
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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3/11/2023 3:55:23 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123038-6
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123038-6

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123038-6

Comments
No additional comments.

Receipt
The samples were received on 1/6/2023 6:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.1º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method EPA 608.3 Low Level - Endrin Aldehyde only (ug/L units) - MDL(J): This method was subcontracted to Weck Laboratories, Inc.. The subcontract laboratory certification is different from that of the facility issuing the final report.

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 - COMP

Job ID: 570-123038-6

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123038-3	Outfall018_20230106_Comp_Extra	Water	01/06/23 10:15	01/06/23 18:15

WECK LABORATORIES, INC.

Certificate of Analysis

FINAL REPORT

Work Orders:	3B02107	**Report Date:**	3/09/2023
		Received Date:	2/2/2023
Project:	570-123038-6	**Turnaround Time:**	Normal
		Phones:	(949) 261-1022
		Fax:	(949) 260-3297
Attn:	Virendra Patel	**P.O. #:**	
Client:	Eurofins Calscience - Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780	**Billing Code:**	

Dear Virendra Patel,

Enclosed are the results of analyses for samples received 2/02/23 with the Chain-of-Custody document. The samples were received in good condition, at 1.9 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: Outfall018_20230106_Comp_Extra (570-123038-3) — Sampled: 01/06/23 10:15 by Client

3B02107-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 608.3			**Instr:** GC07				
Batch ID: W3B0399 **Preparation:** EPA 608/L-L SF			**Prepared:** 02/06/23 08:21				**Analyst:** RJG
Endrin aldehyde	ND	0.0019	0.0050	ug/l	1	02/15/23	O-09
Surrogate(s)							
Decachlorobiphenyl	*69%*		*33-133*	*Conc: 0.0645*		*02/15/23*	
Tetrachloro-meta-xylene	*56%*		*32-130*	*Conc: 0.0525*		*02/15/23*	

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

Quality Control Results

Chlorinated Pesticides and/or PCBs by GC/ECD

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3B0399-BLK1)					**Prepared: 02/06/23**	**Analyzed: 02/15/23**					
Endrin aldehyde	ND	0.0019	0.0050	ug/l							
Surrogate(s)											
Decachlorobiphenyl	*0.0675*			*ug/l*	*0.100*		*67*	*33-133*			
Tetrachloro-meta-xylene	*0.0595*			*ug/l*	*0.100*		*59*	*32-130*			
LCS (W3B0399-BS1)					**Prepared: 02/06/23**	**Analyzed: 02/15/23**					
Endrin aldehyde	0.0684	0.0019	0.0050	ug/l	0.100		68	18-130			
Surrogate(s)											
Decachlorobiphenyl	*0.0735*			*ug/l*	*0.100*		*74*	*33-133*			
Tetrachloro-meta-xylene	*0.0583*			*ug/l*	*0.100*		*58*	*32-130*			
LCS Dup (W3B0399-BSD1)					**Prepared: 02/06/23**	**Analyzed: 02/15/23**					
Endrin aldehyde	0.0791	0.0019	0.0050	ug/l	0.100		79	18-130	15	30	
Surrogate(s)											
Decachlorobiphenyl	*0.0808*			*ug/l*	*0.100*		*81*	*33-133*			
Tetrachloro-meta-xylene	*0.0731*			*ug/l*	*0.100*		*73*	*32-130*			

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634

www.wecklabs.com

Notes and Definitions

Item	Definition
O-09	This sample was received with the EPA recommended holding time expired.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Reviewed by:

Tiffany T. Felix For Rahul R. Nair
Project Manager

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

3PC

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California	
Address: 14859 East Clark Avenue, ,	Due Date Requested: 2/22/2023		
City: City of Industry	TAT Requested (days):		
State, Zip: CA, 917451396			
Phone:	PO #:		
Email:	WO #:		
Project Name: Boeing SSFL NPDES - Outfall 018 - COMP	Project #: 44024446		
Site:	SSOW#:		

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (EPA 608.3 Low Level - Endrin Aldehyde only (ug/L units) - MDL(J))
			Preservation Code:		X	X	
Outfall018_20230106_Comp_Extra (570-123038-3)	1/6/23	10:15 Pacific		Water			X

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chai maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accred attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are re
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time:	Company	Received by:

ICOC No:
570-206007

Containers

Count	Container Type	Preservative
2	Amber Glass 1 liter - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
3	SUBCONTRACT	SUB (EPA 608.3 Low Level - Endrin Aldehyde only (ug/L units) - MDL(J))	Level IV, EQUIS 5C, MDL reporting w/J flag. Pe ug/L

COC	COC matches sample labels?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Receipt Information	Sample Temperature	1.9°C			
	Samples received on ice?	☒	☐		
	Ice Type (Blue/Wet)	WET			
	All samples intact?	☒	☐		
	Samples in proper containers?	☒	☐		
	Sufficient sample volume?	☒	☐		
	Samples intact?	☒	☐		
	Received within holding time?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Sample Preservation Verification?	Sample labels checked for correct preservation?	☒	☐	☐	
	VOC Headspace: (No) none, If Yes (See comment) 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☐	☒	☐ <6m
	pH verified upon receipt? Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 525.2<2; 6710B<2; 608.3 5-9	☐	☐	☒	pH paper Lot# 2
	Free Chlorine Tested <0.1	☒	☐	☐	Cl Test Strip Lot
	O&G pH <2 verified?	☐	☐	☐	pH paper Lot#
	pH adjusted for O&G	☐	☐	☐	pH Reading: Acid Lot# Amt added:
	Project Manager notified?	☐	☐	☒	

08

PM Comments

Sample Receipt Checklist Prepared by:

Signature: *Lester Abad* Date: 02/02/23

QAF-006 V1.0 12/16/2021

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Eurofins Calscience Irvine

570-123038 Chain of Custody

CHAIN OF CUSTODY FORM

123038
Loc: 570
123038
1/2
Page 2 of 2

Client Name/Address	Project
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

ANALYSIS REQUIRED

Analysis columns (frequency code above each): (1) R/A – Total Dissolved Metals (E200.7): As, Ba, B, Be, Co, Cr Fe, Mn, Ni, V Zn, Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl; (2) R – Cyanide (SM4500-CN-E / E335.2); (3) R – Gross Alpha(E900.0) Gross Beta(E900.0) Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901 0 or E901 1); (4) R – Chronic Toxicity – Selenastrum [illegible]; (5) A – 1 4-Dioxane (E624 (SW8260M_SIM)); (6) A – Total Organic Carbon (415.2 (SM 5310B)); (7) A – Monomethyl hydrazine (SW8315M/DV-WC-0077); (8) A – Cr (VI), Total (E218.6); (9) R – Total Dissolved Metals. Mercury (E245.1); (10) QRSW – Chlorpyrifos, Diazinon (E525.2) [illegible]

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	Comments
Outfall 018	Outfall018_20230106_Comp_F	1/6/2023 / 1015	WM	1 L Poly	1	None	190	No	X										Filter and preserve w/in 24hrs of receipt at lab.
			WM	borosilicate vials	1	None	320	No									X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230106_Comp	1/6/2023 / 1015	WM	500 mL Poly	1	NaOH	220	No		X									
			WM	2.5 Gal Cube	1	None	225	No		\	X								Unfiltered and unpreserved analysis, Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
			WM	1 L Glass Amber	1	None	230	No											
			WM	1 Gal Cube	6	None	235	No				x							Only test if first or second rain events of the year. [illegible] ABC Labs [illegible] *
			WM	40 mL VOA	3	HCl	240	No					X						
			WM	1 L Glass Amber	1	HCl	245	No						X					
			WM	8 oz. glass amber	1	H_2SO_4	255	No							X				
			WM	500 mL Poly	1	None	260	No								X			
			WM	1L Glass Amber	2	None	275	No										X	Extract [illegible] at [illegible] 002 011, or 018.
	Outfall018_20230106_Comp_Extra	1/6/2023 / 1015	WM	40 mL VOA	3	HCl	240	No					H						Hold
			WM	1 L Glass Amber	2	None	255	No							H				Hold

Legend A=Annual, R=Routine, QRSW=Quarterly Receiving Water

Relinquished By	Date/Time:	Company	Received By	Date/Time:
[signature]	1-6-2023 / 1300	H&A	[signature]	1/6/23 1300 EC
[signature]	1/6/23 1815	EC	[signature]	1/6/23 1815 FC

Turn-around time (Check)
24 Hour: ____ 72 Hour: ____ 10 Day: X
48 Hour: ____ 5 Day: ____ Normal: ____

Sample Integrity: (Check)
Intact: ____ On Ice: ____

Store samples for 6 months.
Data Requirements: (Check)
No Level IV: ____ All Level IV: X

* Sampled hand delivered to ABC Labs on copied COC

1.7/17, 19/19, 21/21 Sc11

2019-2020 Rainy Season
Version 5

3/11/2023

123038

2|2

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Annual Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R/A Total Recoverable Metals: (E200.7): As, Ba, B, Be, Co, Cr, Fe, Mn, Ni, V, Zn Hardness as CaCO3 (E200.8): Ag, Cd, Cu, Pb, Sb, Se, Tl [3]	R TCDD (and all congeners) (E1613B) [4]	R BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc)) [5]	R Surfactants (MBAS) (SM5540C/E425.1) [6]	R/A Cl- F- SO4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300) [7]	R Turbidity TDS (SM2540C/E180.1) [8]	R TSS (160.2 (SM2540D)) [9]	R Ammonia-N (E350.2) [10]	A Priority Pollutants-Pesticides+PCBs (E608) [11]	A Priority Pollutants-SVOCs (E625)	R Total Recoverable Metals: Mercury (E245.1) [12]	Comments
Outfall 018	Outfall018_20230106_Comp	1/6/2023 1015	WM	500 mL Poly	1	HNO_3	80	No	X									
			WM	1 L Glass Amber	2	None	110	No		X								
			WM	1 L Poly	1	None	115	No			X							
			WM	500 mL Poly	2	None	120	No				X						
			WM	500 mL Poly	2	None	125	No					X					48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X				48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X		
			WM	1 L Glass Amber	2	None	250	No									X	
			WM	1 L Glass Amber	2	None	175	No										
			WM	1 L Poly	1	None	185	No							X			
	Outfall018_20230106_Comp_Extra	1/6/2023 1015	WM	1 L Glass Amber	2	None	110	No		H								Hold
			WM	500 mL Poly	2	None	120	No				H						Hold
			WM	500 mL Poly	2	None	125	No					H					Hold
			WM	1 L Glass Amber	2	None	250	No									H	Hold
			WM	1 L Glass Amber	2	None	175	No										Hold

Legend: A=Annual, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-6-2023/1300	H&A	[signature]	1/6/23 1300 EC
[signature]	1/6/23 1815	EC	[signature]	1/6/23 1815 EC

Turn-around time: (Check)
24 Hour _____ 72 Hour _____ 10 Day __X__
48 Hour _____ 5 Day _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

1.7/1.7 1.9/1.9 2.1/2.1 SCH

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3/11/2023

2019-2020 Rainy Season
Version 5

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123038-6

Login Number: 123038
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 1/23/2023 2:03:19 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 018 Grab

JOB NUMBER

570-123261-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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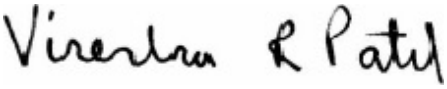
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123261-1
Project/Site: Boeing SSFL NPDES - Outfall 018 Grab

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc. Job ID: 570-123261-1
Project/Site: Boeing SSFL NPDES - Outfall 018 Grab

Job ID: 570-123261-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123261-1

Comments
No additional comments.

Receipt
The samples were received on 1/9/2023 5:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.7º C.

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-294547. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 1664A: The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-295550.
Method: 1664.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123261-1
Project/Site: Boeing SSFL NPDES - Outfall 018 Grab

Client Sample ID: Outfall018_20230109_Grab
Lab Sample ID: 570-123261-1

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	340		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA

Client Sample ID: TB-20230109
Lab Sample ID: 570-123261-3

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: Outfall018_20230109_Grab **Lab Sample ID: 570-123261-1**
Date Collected: 01/09/23 08:40 **Matrix: Water**
Date Received: 01/09/23 17:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/10/23 00:11	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/10/23 00:11	1
Trichloroethene	ND		0.50	0.17	ug/L			01/10/23 00:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*		*01/10/23 00:11*	*1*
Toluene-d8 (Surr)	*99*		*60 - 140*		*01/10/23 00:11*	*1*

Client Sample ID: TB-20230109 **Lab Sample ID: 570-123261-3**
Date Collected: 01/09/23 08:40 **Matrix: Water**
Date Received: 01/09/23 17:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/09/23 21:56	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/09/23 21:56	1
Trichloroethene	ND		0.50	0.17	ug/L			01/09/23 21:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*60 - 140*		*01/09/23 21:56*	*1*
Toluene-d8 (Surr)	*102*		*60 - 140*		*01/09/23 21:56*	*1*

General Chemistry

Client Sample ID: Outfall018_20230109_Grab
Lab Sample ID: 570-123261-1
Date Collected: 01/09/23 08:40
Matrix: Water
Date Received: 01/09/23 17:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	ND		0.99	0.51	mg/L		01/12/23 18:34	01/13/23 16:10	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance (SM 2510B)	**340**		1.0	1.0	umhos/cm			01/19/23 20:58	1
Settleable Solids (SM 2540F)	ND		0.10	0.10	mL/L			01/10/23 14:44	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 Grab

Job ID: 570-123261-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		BFB	TOL								
Lab Sample ID	Client Sample ID	(60-140)	(60-140)								
570-123261-1	Outfall018_20230109_Grab	98	99								
570-123261-3	TB-20230109	100	102								
LCS 570-294547/1003	Lab Control Sample	100	99								
LCSD 570-294547/4	Lab Control Sample Dup	101	103								
MB 570-294547/6	Method Blank	97	99								

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-294547/6
Matrix: Water
Analysis Batch: 294547

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/09/23 16:40	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/09/23 16:40	1
Trichloroethene	ND		0.50	0.17	ug/L			01/09/23 16:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*60 - 140*		*01/09/23 16:40*	*1*
Toluene-d8 (Surr)	*99*		*60 - 140*		*01/09/23 16:40*	*1*

Lab Sample ID: LCS 570-294547/1003
Matrix: Water
Analysis Batch: 294547

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1-Dichloroethene			10.0	9.10		ug/L		91	50 - 150		
1,2-Dichloroethane			10.0	9.48		ug/L		95	70 - 130		
Trichloroethene			10.0	9.38		ug/L		94	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*60 - 140*
Toluene-d8 (Surr)	*99*		*60 - 140*

Lab Sample ID: LCSD 570-294547/4
Matrix: Water
Analysis Batch: 294547

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene			10.0	9.16		ug/L		92	50 - 150	1	32
1,2-Dichloroethane			10.0	9.74		ug/L		97	70 - 130	3	49
Trichloroethene			10.0	9.90		ug/L		99	65 - 135	5	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*60 - 140*
Toluene-d8 (Surr)	*103*		*60 - 140*

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-295550/1-A
Matrix: Water
Analysis Batch: 295796

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 295550

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		1.0	0.51	mg/L		01/12/23 18:34	01/13/23 16:10	1

Method: 1664A - HEM and SGT-HEM (Continued)

Lab Sample ID: LCS 570-295550/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 295796 — **Prep Batch: 295550**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM (Oil & Grease)	40.0	37.6		mg/L		94	78 - 114

Lab Sample ID: LCSD 570-295550/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 295796 — **Prep Batch: 295550**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM (Oil & Grease)	40.0	36.8		mg/L		92	78 - 114	2	18

Lab Sample ID: MB 570-296047/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 296473 — **Prep Batch: 296047**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		1.0	0.51	mg/L		01/16/23 09:25	01/17/23 13:51	1

Lab Sample ID: LCS 570-296047/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 296473 — **Prep Batch: 296047**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM (Oil & Grease)	40.0	38.7		mg/L		97	78 - 114

Lab Sample ID: LCSD 570-296047/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 296473 — **Prep Batch: 296047**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM (Oil & Grease)	40.0	38.1		mg/L		95	78 - 114	2	18

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-297351/10 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 297351

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			01/19/23 19:00	1

Lab Sample ID: 570-124593-F-2 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 297351

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Specific Conductance	1300		1300		umhos/cm		0.5	25

Client: Haley & Aldrich, Inc.
Job ID: 570-123261-1
Project/Site: Boeing SSFL NPDES - Outfall 018 Grab

Method: SM 2540F - Solids, Settleable

Lab Sample ID: 570-123302-A-1 DU
Matrix: Water
Analysis Batch: 294859

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Settleable Solids	ND			ND		mL/L				NC	10

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123261-1
Project/Site: Boeing SSFL NPDES - Outfall 018 Grab

GC/MS VOA

Analysis Batch: 294547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123261-1	Outfall018_20230109_Grab	Total/NA	Water	624.1	
570-123261-3	TB-20230109	Total/NA	Water	624.1	
MB 570-294547/6	Method Blank	Total/NA	Water	624.1	
LCS 570-294547/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-294547/4	Lab Control Sample Dup	Total/NA	Water	624.1	

General Chemistry

Analysis Batch: 294859

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123261-1	Outfall018_20230109_Grab	Total/NA	Water	SM 2540F	
570-123302-A-1 DU	Duplicate	Total/NA	Water	SM 2540F	

Prep Batch: 295550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123261-1	Outfall018_20230109_Grab	Total/NA	Water	1664A	
MB 570-295550/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-295550/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-295550/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 295796

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123261-1	Outfall018_20230109_Grab	Total/NA	Water	1664A	295550
MB 570-295550/1-A	Method Blank	Total/NA	Water	1664A	295550
LCS 570-295550/2-A	Lab Control Sample	Total/NA	Water	1664A	295550
LCSD 570-295550/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	295550

Prep Batch: 296047

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-296047/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-296047/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-296047/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 296473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-296047/1-A	Method Blank	Total/NA	Water	1664A	296047
LCS 570-296047/2-A	Lab Control Sample	Total/NA	Water	1664A	296047
LCSD 570-296047/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	296047

Analysis Batch: 297351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123261-1	Outfall018_20230109_Grab	Total/NA	Water	SM 2510B	
MB 570-297351/10	Method Blank	Total/NA	Water	SM 2510B	
570-124593-F-2 DU	Duplicate	Total/NA	Water	SM 2510B	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-123261-1
Project/Site: Boeing SSFL NPDES - Outfall 018 Grab

Client Sample ID: Outfall018_20230109_Grab
Lab Sample ID: 570-123261-1
Date Collected: 01/09/23 08:40
Matrix: Water
Date Received: 01/09/23 17:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	294547	01/10/23 00:11	A1W	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Prep	1664A			1007 mL	1000 mL	295550	01/12/23 18:34	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			295796	01/13/23 16:10	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									
Total/NA	Analysis	SM 2510B		1			297351	01/19/23 20:58	UAPD	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	294859	01/10/23 14:44	GG0B	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB-20230109
Lab Sample ID: 570-123261-3
Date Collected: 01/09/23 08:40
Matrix: Water
Date Received: 01/09/23 17:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	294547	01/09/23 21:56	A1W	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123261-1
Project/Site: Boeing SSFL NPDES - Outfall 018 Grab

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-12-22 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123261-1
Project/Site: Boeing SSFL NPDES - Outfall 018 Grab

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4

Protocol References:

1664A = EPA-821-98-002

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 Grab

Job ID: 570-123261-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123261-1	Outfall018_20230109_Grab	Water	01/09/23 08:40	01/09/23 17:15
570-123261-3	TB-20230109	Water	01/09/23 08:40	01/09/23 17:15

123261

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address:
Haley & Aldrich
5333 Mission Center Rd Suite 300
San Diego, CA 92108

Eurofins Calscience Irvine Contact: Christian Bondoc
17461 Derian Ave Suite #100
Irvine CA 92614
Tel 949-260-3218

Project:
Boeing-SSFL NPDES
Permit 2023
Routine Outfall [001, 002, 011, 018]
Outfall 018
Grab

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Project Manager: Katherine Miller
520.289 8606, 520.904.6944 (cell)

Sampler: Adrian Mobeka

Field Manager: Mark Dominick
978.234.5033, 818.599.0702 (cell)

ANALYSIS REQUIRED (R = Routine for first four analyses)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Oil & Grease (E1664A-HEM)	VOCs - only 1,1-DCE, 1,2-DCA, TCE (E624)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Comments
Outfall 018	Outfall018_20230109_Grab	1/9/2023 / 0840	W/M	1 L Glass Amber	2	HCl	15	No	X				
			W/M	40 mL VOA	3	HCl	30	No		X			
			W/M	1L Poly	1	None	70	No			X		
			W/M	500 mL Poly	1	None	75	No				X	
	Outfall018_20230109_Grab_Extra	1/9/2023 / 0840	W/M	1 L Glass Amber	2	HCl	15	No	H				Hold
			W/M	40 mL VOA	3	HCl	30	No		H			Hold
			W/M	500 mL Poly	1	None	75	No				H	Hold
Trip Blanks	TB-20230109	1/9/2023 / 0840	WQ	40 mL VOA	3	HCl	30	No		X			

Field Readings — Meter serial #: TRACFT9B

Field Readings: (Include units)
Time of Readings: 0840
DO 11.78 mg/L
pH 8.45 pH unit
Temp 53.6 °C/F

Field readings QC
Checked by: [signature] 0840
Date/Time: 1-9-2023/0840

570-123261 Chain of Custody

Legend: R=Routine

Relinquished By	Date/Time:	Company	Received By	Date/Time:	
[signature]	1-9-2023 1315	H/A	[signature]	1/9/23 1315	EC
[signature]	1/9/23 1715	EC	[signature]	1/9/23 1715	

Turn-around time: (Check)
24 Hour ______ 72 Hour ______ 10 Day ___X___
48 Hour ______ 5 Day ______ Normal ______

Sample Integrity: (Check)
Intact: ______ On Ice: ______

Store samples for 6 months

Data Requirements: (Check)
No Level IV: ______ All Level IV: ___X___

1.7/1.7 SC11

2019-2020 Rainy Season
Version 4

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123261-1

Login Number: 123261
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/8/2023 11:00:45 AM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 018 - Comp

JOB NUMBER

570-123665-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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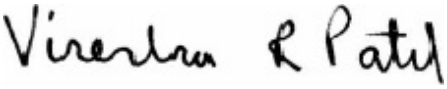
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123665-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
EY	Result exceeds normal dynamic range; reported as a min. est.
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123665-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123665-1

Comments
No additional comments.

Receipt
The samples were received on 1/11/2023 7:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.2º C, 1.9º C and 2.1º C.

GC/MS Semi VOA
Method 625.1 SIM: The continuing calibration verification (CCV) associated with batch 570-299094 recovered above the upper control limit for 4,6-Dinitro-2-methylphenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: Outfall018_20230111_Comp (570-123665-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
Method 314.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 570-296367 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Perchlorate in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

Method 314.0: Due to the high concentration of Perchlorate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 570-296367 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: Outfall018_20230111_Comp_F (570-123665-3). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: Outfall018_20230111_Comp_F (570-123665-3). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 2540D: Sample filtered very slowly. Was unable to filter a large enough sample volume due to time constraints.

Outfall018_20230111_Comp (570-123665-1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-296435. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.
Method 608

Job ID: 570-123665-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-296476.The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.
Method:625.1 Sim

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Client Sample ID: Outfall018_20230111_Comp
Lab Sample ID: 570-123665-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.2		1.0	0.36	mg/L	1		300.0	Total/NA
Nitrite as N	0.076	J,DX	0.10	0.043	mg/L	1		300.0	Total/NA
Nitrate as N	1.2		0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate - DL	96		10	2.4	mg/L	10		300.0	Total/NA
Nitrate Nitrite as N	1.3		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Copper	2.2		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	0.15	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Iron	6.8	J,DX	20	3.7	ug/L	1		200.8	Total Recoverable
Ammonia	0.041	J,DX	0.075	0.032	mg/L	1		350.1	Total/NA
Turbidity	0.30		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Dissolved Solids	260		10	8.7	mg/L	1		SM 2540C	Total/NA

Client Sample ID: Outfall018_20230111_Comp_F
Lab Sample ID: 570-123665-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	1.1	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	4.6	J,DX BU	20	3.7	ug/L	1		200.8	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: Outfall018_20230111_Comp
Lab Sample ID: 570-123665-1
Date Collected: 01/11/23 08:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		0.95	0.13	ug/L		01/17/23 13:55	01/27/23 12:27	1
2,4-Dinitrotoluene	ND		0.19	0.11	ug/L		01/17/23 13:55	01/27/23 12:27	1
Bis(2-ethylhexyl) phthalate	ND		4.7	3.4	ug/L		01/17/23 13:55	01/27/23 12:27	1
N-Nitrosodimethylamine	ND		0.19	0.18	ug/L		01/17/23 13:55	01/27/23 12:27	1
Pentachlorophenol	ND		0.95	0.80	ug/L		01/17/23 13:55	01/27/23 12:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*58*		*31 - 120*	*01/17/23 13:55*	*01/27/23 12:27*	*1*
Phenol-d6 (Surr)	*29*		*10 - 120*	*01/17/23 13:55*	*01/27/23 12:27*	*1*
p-Terphenyl-d14 (Surr)	*94*		*45 - 120*	*01/17/23 13:55*	*01/27/23 12:27*	*1*
2,4,6-Tribromophenol	*86*		*28 - 127*	*01/17/23 13:55*	*01/27/23 12:27*	*1*
2-Fluorophenol	*42*		*17 - 120*	*01/17/23 13:55*	*01/27/23 12:27*	*1*
Nitrobenzene-d5	*64*		*27 - 120*	*01/17/23 13:55*	*01/27/23 12:27*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: 40CFR136A 608.3 - Organochlorine Pesticides in Water

Client Sample ID: Outfall018_20230111_Comp
Lab Sample ID: 570-123665-1
Date Collected: 01/11/23 08:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		01/17/23 12:18	01/19/23 13:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*49*		*20 - 139*	*01/17/23 12:18*	*01/19/23 13:51*	*1*
DCB Decachlorobiphenyl (Surr)	*37*		*20 - 154*	*01/17/23 12:18*	*01/19/23 13:51*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: Outfall018_20230111_Comp
Lab Sample ID: 570-123665-1
Date Collected: 01/11/23 08:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.2		1.0	0.36	mg/L			01/12/23 08:51	1
Nitrite as N	0.076	J,DX	0.10	0.043	mg/L			01/12/23 08:51	1
Nitrate as N	1.2		0.10	0.020	mg/L			01/12/23 08:51	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 300.0 - Anions, Ion Chromatography - DL

Client Sample ID: Outfall018_20230111_Comp
Lab Sample ID: 570-123665-1
Date Collected: 01/11/23 08:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	96		10	2.4	mg/L			01/12/23 10:49	10

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: Outfall018_20230111_Comp
Lab Sample ID: 570-123665-1
Date Collected: 01/11/23 08:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/17/23 18:09	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: Outfall018_20230111_Comp
Lab Sample ID: 570-123665-1
Date Collected: 01/11/23 08:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	1.3		0.10	0.020	mg/L			01/17/23 16:16	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: Outfall018_20230111_Comp
Date Collected: 01/11/23 08:45
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123665-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/16/23 07:29	01/16/23 12:34	1
Copper	**2.2**		2.0	0.32	ug/L		01/16/23 07:29	01/16/23 12:34	1
Lead	**0.15**	**J,DX**	1.0	0.12	ug/L		01/16/23 07:29	01/16/23 12:34	1
Selenium	ND		2.0	0.52	ug/L		01/16/23 07:29	01/16/23 12:34	1
Iron	**6.8**	**J,DX**	20	3.7	ug/L		01/16/23 07:29	01/16/23 12:34	1
Zinc	ND		20	2.8	ug/L		01/16/23 07:29	01/16/23 12:34	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: Outfall018_20230111_Comp_F
Lab Sample ID: 570-123665-3
Date Collected: 01/11/23 08:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			01/18/23 09:21	1
Copper	**1.1**	**J,DX BU**	2.0	0.32	ug/L			01/18/23 09:21	1
Lead	ND	BU	1.0	0.12	ug/L			01/18/23 09:21	1
Selenium	ND	BU	2.0	0.52	ug/L			01/18/23 09:21	1
Iron	**4.6**	**J,DX BU**	20	3.7	ug/L			01/18/23 09:21	1
Zinc	ND	BU	20	2.8	ug/L			01/18/23 09:21	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: Outfall018_20230111_Comp
Lab Sample ID: 570-123665-1
Date Collected: 01/11/23 08:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		01/13/23 16:10	01/16/23 19:36	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: Outfall018_20230111_Comp_F
Lab Sample ID: 570-123665-3
Date Collected: 01/11/23 08:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	BU	0.20	0.12	ug/L		01/13/23 18:30	01/16/23 20:11	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

General Chemistry

Client Sample ID: Outfall018_20230111_Comp
Lab Sample ID: 570-123665-1
Date Collected: 01/11/23 08:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	**0.041**	**J,DX**	0.075	0.032	mg/L		01/20/23 12:20	01/20/23 14:17	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			01/13/23 16:38	1
Turbidity (SM 2130B)	**0.30**		0.05	0.05	NTU			01/11/23 21:38	1
Total Dissolved Solids (SM 2540C)	**260**		10	8.7	mg/L			01/18/23 14:47	1
Total Suspended Solids (SM 2540D)	ND		3.1	2.6	mg/L			01/16/23 19:52	1
MBAS (SM 5540C)	ND		0.30	0.054	mg/L		01/11/23 21:00	01/11/23 21:47	1
Biochemical Oxygen Demand (SM5210B)	ND		2.0	1.0	mg/L			01/12/23 18:09	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Job ID: 570-123665-1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	PHL6	TPHd14	TBP	2FP	NBZ
Lab Sample ID	Client Sample ID	(31-120)	(10-120)	(45-120)	(28-127)	(17-120)	(27-120)
570-123665-1	Outfall018_20230111_Comp	58	29	94	86	42	64
LCS 570-296476/2-A	Lab Control Sample	81	44	105	109	63	81
LCSD 570-296476/3-A	Lab Control Sample Dup	80	45	106	106	63	80
MB 570-296476/1-A	Method Blank	55	26	76	69	40	64

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX1	DCB1
Lab Sample ID	Client Sample ID	(20-139)	(20-154)
570-123665-1	Outfall018_20230111_Comp	49	37

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl (Surr)

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX1	DCB2
Lab Sample ID	Client Sample ID	(20-139)	(20-154)
LCS 570-296435/2-A	Lab Control Sample	85	88
LCSD 570-296435/3-A	Lab Control Sample Dup	85	88
MB 570-296435/1-A	Method Blank	90	89

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-296476/1-A
Matrix: Water
Analysis Batch: 299094

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296476

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		01/17/23 13:55	01/27/23 11:45	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		01/17/23 13:55	01/27/23 11:45	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		01/17/23 13:55	01/27/23 11:45	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		01/17/23 13:55	01/27/23 11:45	1
Pentachlorophenol	ND		1.0	0.84	ug/L		01/17/23 13:55	01/27/23 11:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*55*		*31 - 120*	*01/17/23 13:55*	*01/27/23 11:45*	*1*
Phenol-d6 (Surr)	*26*		*10 - 120*	*01/17/23 13:55*	*01/27/23 11:45*	*1*
p-Terphenyl-d14 (Surr)	*76*		*45 - 120*	*01/17/23 13:55*	*01/27/23 11:45*	*1*
2,4,6-Tribromophenol	*69*		*28 - 127*	*01/17/23 13:55*	*01/27/23 11:45*	*1*
2-Fluorophenol	*40*		*17 - 120*	*01/17/23 13:55*	*01/27/23 11:45*	*1*
Nitrobenzene-d5	*64*		*27 - 120*	*01/17/23 13:55*	*01/27/23 11:45*	*1*

Lab Sample ID: LCS 570-296476/2-A
Matrix: Water
Analysis Batch: 298807

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296476

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4,6-Trichlorophenol	20.0	21.6		ug/L		108	52 - 129
2,4-Dinitrotoluene	20.0	24.7		ug/L		124	48 - 127
Bis(2-ethylhexyl) phthalate	20.0	25.9		ug/L		130	29 - 137
N-Nitrosodimethylamine	20.0	12.3		ug/L		61	20 - 120
Pentachlorophenol	20.0	23.5		ug/L		118	38 - 152

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*81*		*31 - 120*
Phenol-d6 (Surr)	*44*		*10 - 120*
p-Terphenyl-d14 (Surr)	*105*		*45 - 120*
2,4,6-Tribromophenol	*109*		*28 - 127*
2-Fluorophenol	*63*		*17 - 120*
Nitrobenzene-d5	*81*		*27 - 120*

Lab Sample ID: LCSD 570-296476/3-A
Matrix: Water
Analysis Batch: 298807

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296476

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4,6-Trichlorophenol	20.0	21.2		ug/L		106	52 - 129	2	35
2,4-Dinitrotoluene	20.0	24.5		ug/L		122	48 - 127	1	25
Bis(2-ethylhexyl) phthalate	20.0	25.2		ug/L		126	29 - 137	3	50
N-Nitrosodimethylamine	20.0	12.4		ug/L		62	20 - 120	1	21
Pentachlorophenol	20.0	23.3		ug/L		116	38 - 152	1	52

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*80*		*31 - 120*
Phenol-d6 (Surr)	*45*		*10 - 120*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-296476/3-A
Matrix: Water
Analysis Batch: 298807

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296476

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
p-Terphenyl-d14 (Surr)	*106*		*45 - 120*
2,4,6-Tribromophenol	*106*		*28 - 127*
2-Fluorophenol	*63*		*17 - 120*
Nitrobenzene-d5	*80*		*27 - 120*

Method: 608.3 - Organochlorine Pesticides in Water

Lab Sample ID: MB 570-296435/1-A
Matrix: Water
Analysis Batch: 296586

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296435

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		01/17/23 12:18	01/18/23 20:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*90*		*20 - 139*	*01/17/23 12:18*	*01/18/23 20:08*	*1*
DCB Decachlorobiphenyl (Surr)	*89*		*20 - 154*	*01/17/23 12:18*	*01/18/23 20:08*	*1*

Lab Sample ID: LCS 570-296435/2-A
Matrix: Water
Analysis Batch: 296586

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296435

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
alpha-BHC			0.0333	0.0278		ug/L		83	37 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*85*		*20 - 139*
DCB Decachlorobiphenyl (Surr)	*88*		*20 - 154*

Lab Sample ID: LCSD 570-296435/3-A
Matrix: Water
Analysis Batch: 296586

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296435

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
alpha-BHC			0.0333	0.0280		ug/L		84	37 - 140	1	36

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*85*		*20 - 139*
DCB Decachlorobiphenyl (Surr)	*88*		*20 - 154*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-295296/5
Matrix: Water
Analysis Batch: 295296

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			01/12/23 06:53	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 570-295296/5
Matrix: Water
Analysis Batch: 295296

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.10	0.020	mg/L			01/12/23 06:53	1

Lab Sample ID: LCS 570-295296/6
Matrix: Water
Analysis Batch: 295296

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrite as N			2.50	2.64		mg/L		106	90 - 110		
Nitrate as N			5.00	4.97		mg/L		99	90 - 110		

Lab Sample ID: LCSD 570-295296/7
Matrix: Water
Analysis Batch: 295296

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N			2.50	2.65		mg/L		106	90 - 110	0	15
Nitrate as N			5.00	4.97		mg/L		99	90 - 110	0	15

Lab Sample ID: 570-123650-A-1 MS
Matrix: Water
Analysis Batch: 295296

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrite as N	ND		2.50	2.75		mg/L		110	80 - 120		
Nitrate as N	1.4		5.00	6.69		mg/L		106	80 - 120		

Lab Sample ID: 570-123650-A-1 MSD
Matrix: Water
Analysis Batch: 295296

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	ND		2.50	2.75		mg/L		110	80 - 120	0	20
Nitrate as N	1.4		5.00	6.70		mg/L		106	80 - 120	0	20

Lab Sample ID: MB 570-295297/5
Matrix: Water
Analysis Batch: 295297

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			01/12/23 06:53	1
Sulfate	ND		1.0	0.24	mg/L			01/12/23 06:53	1

Lab Sample ID: LCS 570-295297/6
Matrix: Water
Analysis Batch: 295297

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			50.0	49.3		mg/L		99	90 - 110		
Sulfate			50.0	49.7		mg/L		99	90 - 110		

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 570-295297/7
Matrix: Water
Analysis Batch: 295297

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			50.0	49.3		mg/L		99	90 - 110	0	15
Sulfate			50.0	49.6		mg/L		99	90 - 110	0	15

Lab Sample ID: 570-123650-A-1 MS
Matrix: Water
Analysis Batch: 295297

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	35		50.0	92.7		mg/L		116	80 - 120		
Sulfate	11		50.0	64.1		mg/L		107	80 - 120		

Lab Sample ID: 570-123650-A-1 MSD
Matrix: Water
Analysis Batch: 295297

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	35		50.0	92.7		mg/L		116	80 - 120	0	20
Sulfate	11		50.0	64.2		mg/L		107	80 - 120	0	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-296367/7
Matrix: Water
Analysis Batch: 296367

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/17/23 13:59	1

Lab Sample ID: LCS 570-296367/8
Matrix: Water
Analysis Batch: 296367

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	23.9		ug/L		96	85 - 115		

Lab Sample ID: LCSD 570-296367/9
Matrix: Water
Analysis Batch: 296367

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	23.8		ug/L		95	85 - 115	0	15

Lab Sample ID: 570-123690-P-1 MS
Matrix: Water
Analysis Batch: 296367

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	120	EY	50.0	206	EY LM	ug/L		171	80 - 120		

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: 570-123690-P-1 MSD
Matrix: Water
Analysis Batch: 296367

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	120	EY	50.0	185	EY LM	ug/L		130	80 - 120	10	15

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-295993/1-A
Matrix: Water
Analysis Batch: 296199

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 295993

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/16/23 07:29	01/16/23 11:51	1
Copper	ND		2.0	0.32	ug/L		01/16/23 07:29	01/16/23 11:51	1
Lead	ND		1.0	0.12	ug/L		01/16/23 07:29	01/16/23 11:51	1
Selenium	ND		2.0	0.52	ug/L		01/16/23 07:29	01/16/23 11:51	1
Iron	ND		20	3.7	ug/L		01/16/23 07:29	01/16/23 11:51	1
Zinc	ND		20	2.8	ug/L		01/16/23 07:29	01/16/23 11:51	1

Lab Sample ID: LCS 570-295993/2-A
Matrix: Water
Analysis Batch: 296199

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 295993

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	80.5		ug/L		101	85 - 115
Copper	80.0	81.2		ug/L		102	85 - 115
Lead	80.0	80.5		ug/L		101	85 - 115
Selenium	80.0	78.9		ug/L		99	85 - 115
Iron	800	810		ug/L		101	85 - 115
Zinc	80.0	79.5		ug/L		99	85 - 115

Lab Sample ID: LCSD 570-295993/3-A
Matrix: Water
Analysis Batch: 296199

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 295993

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	78.3		ug/L		98	85 - 115	3	20
Copper	80.0	80.4		ug/L		100	85 - 115	1	20
Lead	80.0	79.8		ug/L		100	85 - 115	1	20
Selenium	80.0	78.2		ug/L		98	85 - 115	1	20
Iron	800	806		ug/L		101	85 - 115	0	20
Zinc	80.0	77.7		ug/L		97	85 - 115	2	20

Lab Sample ID: 570-123665-1 MS
Matrix: Water
Analysis Batch: 296199

Client Sample ID: Outfall018_20230111_Comp
Prep Type: Total Recoverable
Prep Batch: 295993

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND		100	88.5		ug/L		89	80 - 120
Copper	2.2		100	91.0		ug/L		89	80 - 120
Lead	0.15	J,DX	100	89.0		ug/L		89	80 - 120
Selenium	ND		100	81.8		ug/L		82	80 - 120
Iron	6.8	J,DX	100	97.0		ug/L		90	80 - 120

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-123665-1 MS
Matrix: Water
Analysis Batch: 296199

Client Sample ID: Outfall018_20230111_Comp
Prep Type: Total Recoverable
Prep Batch: 295993

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Zinc	ND		100	86.7		ug/L		87	80 - 120

Lab Sample ID: 570-123665-1 MSD
Matrix: Water
Analysis Batch: 296199

Client Sample ID: Outfall018_20230111_Comp
Prep Type: Total Recoverable
Prep Batch: 295993

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND		100	92.6		ug/L		93	80 - 120	5	20
Copper	2.2		100	94.9		ug/L		93	80 - 120	4	20
Lead	0.15	J,DX	100	92.2		ug/L		92	80 - 120	4	20
Selenium	ND		100	88.7		ug/L		89	80 - 120	8	20
Iron	6.8	J,DX	100	104		ug/L		97	80 - 120	7	20
Zinc	ND		100	92.8		ug/L		93	80 - 120	7	20

Lab Sample ID: MB 570-295857/1-A
Matrix: Water
Analysis Batch: 296754

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L			01/18/23 10:32	1
Copper	ND		2.0	0.32	ug/L			01/18/23 10:32	1
Lead	ND		1.0	0.12	ug/L			01/18/23 10:32	1
Selenium	ND		2.0	0.52	ug/L			01/18/23 10:32	1
Iron	ND		20	3.7	ug/L			01/18/23 10:32	1
Zinc	ND		20	2.8	ug/L			01/18/23 10:32	1

Lab Sample ID: LCS 570-295857/2-A
Matrix: Water
Analysis Batch: 296754

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	78.1		ug/L		98	85 - 115
Copper	80.0	79.4		ug/L		99	85 - 115
Lead	80.0	79.5		ug/L		99	85 - 115
Selenium	80.0	78.2		ug/L		98	85 - 115
Iron	800	786		ug/L		98	85 - 115
Zinc	80.0	79.0		ug/L		99	85 - 115

Lab Sample ID: LCSD 570-295857/3-A
Matrix: Water
Analysis Batch: 296754

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	75.2		ug/L		94	85 - 115	4	20
Copper	80.0	78.4		ug/L		98	85 - 115	1	20
Lead	80.0	77.8		ug/L		97	85 - 115	2	20
Selenium	80.0	74.4		ug/L		93	85 - 115	5	20
Iron	800	792		ug/L		99	85 - 115	1	20
Zinc	80.0	76.6		ug/L		96	85 - 115	3	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-295795/1-A
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 295795

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		01/13/23 16:10	01/16/23 18:50	1

Lab Sample ID: LCS 570-295795/2-A
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 295795

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	8.51		ug/L		106	85 - 115

Lab Sample ID: LCSD 570-295795/3-A
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 295795

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	8.00	8.65		ug/L		108	85 - 115	2	10

Lab Sample ID: 570-123545-A-2-C MS
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 295795

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		8.00	8.68		ug/L		108	85 - 115

Lab Sample ID: 570-123545-A-2-D MSD
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 295795

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		8.00	8.57		ug/L		107	85 - 115	1	10

Lab Sample ID: MB 570-295846/1-B
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 295898

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		01/13/23 18:30	01/16/23 19:52	1

Lab Sample ID: LCS 570-295846/2-B
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 295898

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	8.40		ug/L		105	85 - 115

Lab Sample ID: LCSD 570-295846/3-B
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 295898

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	8.00	8.29		ug/L		104	85 - 115	1	10

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: 570-123462-B-15-E MS
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 295898

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		8.00	8.85		ug/L		111	85 - 115

Lab Sample ID: 570-123462-B-15-F MSD
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 295898

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		8.00	8.33		ug/L		104	85 - 115	6	10

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-297466/5-A
Matrix: Water
Analysis Batch: 297482

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 297466

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		01/20/23 12:20	01/20/23 14:06	1

Lab Sample ID: LCS 570-297466/6-A
Matrix: Water
Analysis Batch: 297482

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 297466

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	0.500	0.492		mg/L		98	90 - 110

Lab Sample ID: LCSD 570-297466/7-A
Matrix: Water
Analysis Batch: 297482

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 297466

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	0.500	0.497		mg/L		99	90 - 110	1	20

Lab Sample ID: 380-33593-B-1-A MS
Matrix: Water
Analysis Batch: 297482

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 297466

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	0.041	J,DX	0.500	0.526		mg/L		97	90 - 110

Lab Sample ID: 380-33593-B-1-B MSD
Matrix: Water
Analysis Batch: 297482

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 297466

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	0.041	J,DX	0.500	0.515		mg/L		95	90 - 110	2	25

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: 570-123567-G-2-C DU
Matrix: Water
Analysis Batch: 297482

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 297466

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Ammonia	0.085		0.0827		mg/L		2	25

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-296127/11
Matrix: Water
Analysis Batch: 296127

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			01/13/23 14:05	1

Lab Sample ID: LCS 570-296127/12
Matrix: Water
Analysis Batch: 296127

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	255		ug/L		102	90 - 110

Lab Sample ID: LCSD 570-296127/13
Matrix: Water
Analysis Batch: 296127

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	250	255		ug/L		102	90 - 110	0	20

Lab Sample ID: MRL 570-296127/10
Matrix: Water
Analysis Batch: 296127

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	4.46	J,DX	ug/L		89	50 - 150

Lab Sample ID: 570-123567-H-4 MS
Matrix: Water
Analysis Batch: 296127

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	ND		250	235		ug/L		94	70 - 130

Lab Sample ID: 570-123567-H-4 MSD
Matrix: Water
Analysis Batch: 296127

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	ND		250	227		ug/L		91	70 - 130	3	30

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate (Continued)

Lab Sample ID: 570-123567-H-4 DU
Matrix: Water
Analysis Batch: 296127

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Cyanide, Total	ND			ND		ug/L				NC	

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-295186/1
Matrix: Water
Analysis Batch: 295186

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			1000	1000		NTU		100.2	99.0 - 101.0		

Lab Sample ID: LCSSRM 570-295186/2
Matrix: Water
Analysis Batch: 295186

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			10.0	10		NTU		101.0	99.0 - 101.0		

Lab Sample ID: LCSSRM 570-295186/3
Matrix: Water
Analysis Batch: 295186

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			0.0200	ND		NTU		100.0	0.0 - 200.0		

Lab Sample ID: 570-123414-B-1 DU
Matrix: Water
Analysis Batch: 295186

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Turbidity	4.7			4.7		NTU				0.2	25

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-296831/1
Matrix: Water
Analysis Batch: 296831

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			01/18/23 14:47	1

Lab Sample ID: LCS 570-296831/2
Matrix: Water
Analysis Batch: 296831

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			1000	1030		mg/L		103	84 - 108		

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCSD 570-296831/3
Matrix: Water
Analysis Batch: 296831

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids			1000	1060		mg/L		106	84 - 108	2	10

Lab Sample ID: 570-124106-K-3 DU
Matrix: Water
Analysis Batch: 296831

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1300			1320		mg/L				0.2	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-296269/1
Matrix: Water
Analysis Batch: 296269

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/16/23 19:52	1

Lab Sample ID: LCS 570-296269/2
Matrix: Water
Analysis Batch: 296269

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	105		mg/L		105	77 - 116		

Lab Sample ID: LCSD 570-296269/3
Matrix: Water
Analysis Batch: 296269

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	107		mg/L		107	77 - 116	2	10

Lab Sample ID: 570-123650-I-1 DU
Matrix: Water
Analysis Batch: 296269

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	7.4			7.20		mg/L				3	10

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-295262/5-A
Matrix: Water
Analysis Batch: 295260

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 295262

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.30	0.054	mg/L		01/11/23 19:00	01/11/23 20:34	1

Method: SM 5540C - Methylene Blue Active Substances (MBAS) (Continued)

Lab Sample ID: LCS 570-295262/6-A
Matrix: Water
Analysis Batch: 295260

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 295262

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
MBAS			1.00	0.913		mg/L		91	85 - 111		

Lab Sample ID: LCSD 570-295262/7-A
Matrix: Water
Analysis Batch: 295260

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 295262

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS			1.00	0.916		mg/L		92	85 - 111	0	7

Lab Sample ID: 570-123731-L-1-A MS
Matrix: Water
Analysis Batch: 295260

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 295262

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
MBAS	0.10	J,DX	1.00	1.09		mg/L		99	75 - 125		

Lab Sample ID: 570-123731-L-1-B MSD
Matrix: Water
Analysis Batch: 295260

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 295262

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS	0.10	J,DX	1.00	1.12		mg/L		102	75 - 125	3	12

Method: SM5210B - BOD, 5 Day

Lab Sample ID: USB 570-296522/2
Matrix: Water
Analysis Batch: 296522

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L			01/12/23 17:38	1

Lab Sample ID: LCS 570-296522/4
Matrix: Water
Analysis Batch: 296522

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Biochemical Oxygen Demand			199	219		mg/L		110	84.6 - 115.4		

Lab Sample ID: 570-123606-A-1 DU
Matrix: Water
Analysis Batch: 296522

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Biochemical Oxygen Demand	1900			1810		mg/L				3	25

GC/MS Semi VOA

Prep Batch: 296476

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	625	
MB 570-296476/1-A	Method Blank	Total/NA	Water	625	
LCS 570-296476/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-296476/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 298807

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-296476/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	296476
LCSD 570-296476/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	296476

Analysis Batch: 299094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	625.1 SIM	296476
MB 570-296476/1-A	Method Blank	Total/NA	Water	625.1 SIM	296476

GC Semi VOA

Prep Batch: 296435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	608	
MB 570-296435/1-A	Method Blank	Total/NA	Water	608	
LCS 570-296435/2-A	Lab Control Sample	Total/NA	Water	608	
LCSD 570-296435/3-A	Lab Control Sample Dup	Total/NA	Water	608	

Analysis Batch: 296586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-296435/1-A	Method Blank	Total/NA	Water	608.3	296435
LCS 570-296435/2-A	Lab Control Sample	Total/NA	Water	608.3	296435
LCSD 570-296435/3-A	Lab Control Sample Dup	Total/NA	Water	608.3	296435

Analysis Batch: 296909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	608.3	296435

HPLC/IC

Analysis Batch: 295296

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	300.0	
MB 570-295296/5	Method Blank	Total/NA	Water	300.0	
LCS 570-295296/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-295296/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-123650-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
570-123650-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 295297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	300.0	
570-123665-1 - DL	Outfall018_20230111_Comp	Total/NA	Water	300.0	
MB 570-295297/5	Method Blank	Total/NA	Water	300.0	
LCS 570-295297/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-295297/7	Lab Control Sample Dup	Total/NA	Water	300.0	

HPLC/IC (Continued)

Analysis Batch: 295297 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123650-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
570-123650-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 296367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	314.0	
MB 570-296367/7	Method Blank	Total/NA	Water	314.0	
LCS 570-296367/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-296367/9	Lab Control Sample Dup	Total/NA	Water	314.0	
570-123690-P-1 MS	Matrix Spike	Total/NA	Water	314.0	
570-123690-P-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 296515

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	NO2NO3 Calc	

Metals

Prep Batch: 295795

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	245.1	
MB 570-295795/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-295795/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-295795/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
570-123545-A-2-C MS	Matrix Spike	Total/NA	Water	245.1	
570-123545-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	

Filtration Batch: 295846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-3	Outfall018_20230111_Comp_F	Dissolved	Water	Filtration	
MB 570-295846/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-295846/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-295846/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-123462-B-15-E MS	Matrix Spike	Dissolved	Water	Filtration	
570-123462-B-15-F MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Filtration Batch: 295857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-3	Outfall018_20230111_Comp_F	Dissolved	Water	Filtration	
MB 570-295857/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-295857/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-295857/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Prep Batch: 295898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-3	Outfall018_20230111_Comp_F	Dissolved	Water	245.1	295846
MB 570-295846/1-B	Method Blank	Dissolved	Water	245.1	295846
LCS 570-295846/2-B	Lab Control Sample	Dissolved	Water	245.1	295846
LCSD 570-295846/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	295846
570-123462-B-15-E MS	Matrix Spike	Dissolved	Water	245.1	295846
570-123462-B-15-F MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	295846

Metals

Prep Batch: 295993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total Recoverable	Water	200.8	
MB 570-295993/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-295993/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-295993/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-123665-1 MS	Outfall018_20230111_Comp	Total Recoverable	Water	200.8	
570-123665-1 MSD	Outfall018_20230111_Comp	Total Recoverable	Water	200.8	

Analysis Batch: 296199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total Recoverable	Water	200.8	295993
MB 570-295993/1-A	Method Blank	Total Recoverable	Water	200.8	295993
LCS 570-295993/2-A	Lab Control Sample	Total Recoverable	Water	200.8	295993
LCSD 570-295993/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	295993
570-123665-1 MS	Outfall018_20230111_Comp	Total Recoverable	Water	200.8	295993
570-123665-1 MSD	Outfall018_20230111_Comp	Total Recoverable	Water	200.8	295993

Analysis Batch: 296261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	245.1	295795
570-123665-3	Outfall018_20230111_Comp_F	Dissolved	Water	245.1	295898
MB 570-295795/1-A	Method Blank	Total/NA	Water	245.1	295795
MB 570-295846/1-B	Method Blank	Dissolved	Water	245.1	295898
LCS 570-295795/2-A	Lab Control Sample	Total/NA	Water	245.1	295795
LCS 570-295846/2-B	Lab Control Sample	Dissolved	Water	245.1	295898
LCSD 570-295795/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	295795
LCSD 570-295846/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	295898
570-123462-B-15-E MS	Matrix Spike	Dissolved	Water	245.1	295898
570-123462-B-15-F MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	295898
570-123545-A-2-C MS	Matrix Spike	Total/NA	Water	245.1	295795
570-123545-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	295795

Analysis Batch: 296754

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-295857/1-A	Method Blank	Dissolved	Water	200.8	295857
LCS 570-295857/2-A	Lab Control Sample	Dissolved	Water	200.8	295857
LCSD 570-295857/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	295857

Analysis Batch: 296758

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-3	Outfall018_20230111_Comp_F	Dissolved	Water	200.8	295857

General Chemistry

Analysis Batch: 295186

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	SM 2130B	
LCSSRM 570-295186/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-295186/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-295186/3	Lab Control Sample	Total/NA	Water	SM 2130B	
570-123414-B-1 DU	Duplicate	Total/NA	Water	SM 2130B	

General Chemistry

Analysis Batch: 295260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	SM 5540C	295262
MB 570-295262/5-A	Method Blank	Total/NA	Water	SM 5540C	295262
LCS 570-295262/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	295262
LCSD 570-295262/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	295262
570-123731-L-1-A MS	Matrix Spike	Total/NA	Water	SM 5540C	295262
570-123731-L-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5540C	295262

Prep Batch: 295262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	SM 5540C	
MB 570-295262/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-295262/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-295262/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	
570-123731-L-1-A MS	Matrix Spike	Total/NA	Water	SM 5540C	
570-123731-L-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5540C	

Analysis Batch: 296127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	Kelada 01	
MB 570-296127/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-296127/12	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-296127/13	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-296127/10	Lab Control Sample	Total/NA	Water	Kelada 01	
570-123567-H-4 MS	Matrix Spike	Total/NA	Water	Kelada 01	
570-123567-H-4 MSD	Matrix Spike Duplicate	Total/NA	Water	Kelada 01	
570-123567-H-4 DU	Duplicate	Total/NA	Water	Kelada 01	

Analysis Batch: 296269

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	SM 2540D	
MB 570-296269/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-296269/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-296269/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-123650-I-1 DU	Duplicate	Total/NA	Water	SM 2540D	

Analysis Batch: 296522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	SM5210B	
USB 570-296522/2	Method Blank	Total/NA	Water	SM5210B	
LCS 570-296522/4	Lab Control Sample	Total/NA	Water	SM5210B	
570-123606-A-1 DU	Duplicate	Total/NA	Water	SM5210B	

Analysis Batch: 296831

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	SM 2540C	
MB 570-296831/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-296831/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-296831/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
570-124106-K-3 DU	Duplicate	Total/NA	Water	SM 2540C	

General Chemistry

Prep Batch: 297466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	Distill/Ammonia	
MB 570-297466/5-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-297466/6-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-297466/7-A	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	
380-33593-B-1-A MS	Matrix Spike	Total/NA	Water	Distill/Ammonia	
380-33593-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	Distill/Ammonia	
570-123567-G-2-C DU	Duplicate	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 297482

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	350.1	297466
MB 570-297466/5-A	Method Blank	Total/NA	Water	350.1	297466
LCS 570-297466/6-A	Lab Control Sample	Total/NA	Water	350.1	297466
LCSD 570-297466/7-A	Lab Control Sample Dup	Total/NA	Water	350.1	297466
380-33593-B-1-A MS	Matrix Spike	Total/NA	Water	350.1	297466
380-33593-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	297466
570-123567-G-2-C DU	Duplicate	Total/NA	Water	350.1	297466

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Client Sample ID: Outfall018_20230111_Comp
Date Collected: 01/11/23 08:45
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123665-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			1055.2 mL	2 mL	296476	01/17/23 13:55	UM1W	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	299094	01/27/23 12:27	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Prep	608			1500 mL	1 mL	296435	01/17/23 12:18	USUL	EET CAL 4
Total/NA	Analysis	608.3		1	1 mL	1 mL	296909	01/19/23 13:51	N5Y3	EET CAL 4
	Instrument ID: GC52A									
Total/NA	Analysis	300.0		1	4 mL	4 mL	295296	01/12/23 08:51	PS	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	300.0		1	4 mL	4 mL	295297	01/12/23 08:51	PS	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	300.0	DL	10	4 mL	4 mL	295297	01/12/23 10:49	PS	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	314.0		1	4 mL	4 mL	296367	01/17/23 18:09	M5Z3	EET CAL 4
	Instrument ID: IC13									
Total/NA	Analysis	NO2NO3 Calc		1			296515	01/17/23 16:16	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total Recoverable	Prep	200.8			50 mL	50 mL	295993	01/16/23 07:29	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			296199	01/16/23 12:34	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Prep	245.1			25 mL	50 mL	295795	01/13/23 16:10	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			296261	01/16/23 19:36	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	297466	01/20/23 12:20	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	297482	01/20/23 14:17	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	296127	01/13/23 16:38	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			295186	01/11/23 21:38	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	296831	01/18/23 14:47	ZL7L	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	320 mL	1000 mL	296269	01/16/23 19:52	BDH9	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Prep	SM 5540C			100 mL	100 mL	295262	01/11/23 21:00	ZVB7	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	295260	01/11/23 21:47	TXA8	EET CAL 4
	Instrument ID: UV9									
Total/NA	Analysis	SM5210B		1			296522	01/12/23 18:09	U7UR	EET CAL 4
	Instrument ID: BOD3									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Client Sample ID: Outfall018_20230111_Comp_F
Lab Sample ID: 570-123665-3

Date Collected: 01/11/23 08:45
Matrix: Water
Date Received: 01/11/23 19:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	295857	01/13/23 18:26	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			296758	01/18/23 09:21	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	295846	01/13/23 18:17	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	295898	01/13/23 18:30	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			296261	01/16/23 20:11	C0YH	EET CAL 4
	Instrument ID: HG8									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method	Method Description	Protocol	Laboratory
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
608.3	Organochlorine Pesticides in Water	40CFR136A	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
SM5210B	BOD, 5 Day	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
608	Liquid-Liquid Extraction (Separatory Funnel)	40CFR136A	EET CAL 4
625	Liquid-Liquid Extraction	40CFR136A	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123665-1	Outfall018_20230111_Comp	Water	01/11/23 08:45	01/11/23 19:10
570-123665-3	Outfall018_20230111_Comp_F	Water	01/11/23 08:45	01/11/23 19:10

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Friday, January 13, 2023 7:32 AM
To: Virendra Patel; Rapp, Kerry; Dallalah, Michelle
Subject: RE: <Response Requested> FW: Eurofins Calscience sample confirmation files from 570-123665-1 Boeing SSFL NPDES - Outfall 018 - Comp

EXTERNAL EMAIL*

Correct, only analyze for Fe.

Katherine Miller
HALEY & ALDRICH
Tel: 520.289.8606

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Thursday, January 12, 2023 5:18 PM
To: Miller, Katherine <KMiller@haleyaldrich.com>; Rapp, Kerry <KRapp@haleyaldrich.com>; Dallalah, Michelle <MDallalah@haleyaldrich.com>
Subject: <Response Requested> FW: Eurofins Calscience sample confirmation files from 570-123665-1 Boeing SSFL NPDES - Outfall 018 - Comp

CAUTION: External Email

All –

Please check page 2 of the attached COC – EPA 200.7 has As,Mn,Fe? The As/Mn should be removed, correct?

Best Regards,

Virendra Patel
Project Manager

Eurofins Environment Testing Southwest, LLC
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895 5494
Direct: 657-210-6327
Mobile: 714-887-9901

Virendra.Patel@ET.EurofinsUS.com
www.EurofinsUS.com/Env

Follow Us! Facebook | LinkedIn

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Thursday, January 12, 2023 3:46 PM

To: Ms. Katherine Miller <kmiller@haleyaldrich.com>; Kerry Rapp <krapp@haleyaldrich.com>; Michelle Dallalah <mdallalah@haleyaldrich.com>
Subject: Eurofins Calscience sample confirmation files from 570-123665-1 Boeing SSFL NPDES - Outfall 018 - Comp

Hello,

Attached please find the sample confirmation files for job 570-123665-1; Boeing SSFL NPDES - Outfall 018 - Comp

Please feel free to contact me if you have any questions.

Thank you.

Virendra Patel
Project Manager

Eurofins Calscience
Phone: 714-895-5494
Mobile: 714-887-9901

E-mail: Virendra.Patel@et.eurofinsus.com
www.eurofinsus.com/env

Reference: [570-412272]
Attachments: 3

> > Bank information has changed, please refer to remittance information on invoice. < <

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s).	COC No: 570-203937 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123665-3
Address: 13715 Rider Trail North	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045	PO #:			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	WO #:			
Email:	Project #: 44024446			
Project Name: Boeing SSFL NPDES - Outfall 018 - Comp	SSOW#:			
Site:				

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Evaporation Gross Alpha/Beta	903.0/PreoSep_21 Radium-226	904.0/PreoSep_0 Radium-228	905_Sr90/PreoSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall0018_20230111_Comp (570-123665-1)	1/11/23	08 45 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	[signature]	1/12/23 1312				
2						
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

2/8/2023

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-203964 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123665-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/27/2023			
City: West Sacramento	TAT Requested (days):			
State Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - Comp	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall0018_20230111_Comp (570-123665-1)	1/11/23	08 45 Pacific		Water			X		2	See QAS Boeing_w/u to zero ug/L, Use Boeing glassware
Outfall018_20230111_Comp_Extra (570-123665-2)	1/11/23	08 45 Pacific		Water				X	2	See QAS, Boeing_w/u to zero ug/L, Use Boeing glassware

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II III IV Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/12/23 1419	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

123665

Eurofins Calscience Irvine

570-123665 Chain of Custody

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel. 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Project Manager:** Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	**Field Manager:** Mark Dominick 978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R Total Recoverable Metals (E200.7) Zn (E200.8): Cu, Pb, Cd, Se	R TCDD (and all congeners) (E1613B)	R BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	R Surfactants (MBAS) (SM5540C/E425.1)	R Cl- SO_4, Nitrate-N Nitrite-N NO3+NO2-N Perchlorate (E300)	R Turbidity TDS (SM2540C/E180.1)	R TSS (160.2 (SM2540D))	R Ammonia-N (350.2)	R alpha-BHC (E608)	R 2,4,6 TCP 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	R Total Recoverable Metals Mercury (E245.1)	C Total Recoverable Metals (E200.7) Fe		Comments
Outfall 018	Outfall018_20230111_Comp	1/11/2023 0945	WM	500 mL Poly	1	HNO_3	90	No	X										X	X		Outfall 018 analyze for Fe.
			WM	1 L Glass Amber	2	None	110	No		X												
			WM	1L Poly	1	None	115	No			X											
			WM	500 mL Poly	2	None	120	No				X										
			WM	500 mL Poly	2	None	130	No					X									48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X								48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X						
			WM	1 L Glass Amber	2	None	170	No									X					
			WM	1 L Glass Amber	2	None	180	No										X				
			WM	1L Poly	1	None	185	No							X							
	Outfall018_20230111_Comp_Extra	1/11/2023 0845	WM	1 L Glass Amber	2	None	110	No		H												Hold
			WM	500 mL Poly	2	None	120	No				H										Hold
			WM	500 mL Poly	2	None	130	No					H									Hold
			WM	1 L Glass Amber	~~2~~ 1	None	170	No									H					Hold
			WM	1 L Glass Amber	2	None	180	No										H				Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	1/11/23 1400	H&A		1/11/23 1400 EC
	1/11/23 1910 EC			1/11/23 1910

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal. _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: __X__

2.1/2.1 1.2/1.2 1.9/1.9 SCH

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2/8/2023

2019-2020 Rainy Season
Version 4

123665

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:	ANALYSIS REQUIRED
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011 018] Outfall 018 Comp	
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218		
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R: Total Dissolved Metals: (E200.7) Zn (E200.8) Cu, Pb, Cd, Se	R: Cyanide (SM4500-CN-E / E335.2)	R: Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0) Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R: Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA *	R: Total Dissolved Metals. Mercury (E245.1)	C: Total Dissolved Metals. (E200.7) As, Mn, Fe	Comments
Outfall 018	Outfall018_20230111_Comp_F	1/11/2023 0945	WM	1L Poly	1	None	200	No	X					X	Filter and preserve w/in 24hrs of receipt at lab. Outfall 018 analyze for Fe.
			WM	borosilicate vials	1	None	320	No					X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230111_Comp	1/11/2023 0945 *	WM	500 mL Poly	1	NaOH	220	No		X					
			WM	2.5 Gal Cube	1	None	225	No			X				Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No							
			WM	1 Gal Cube	6	None	235	No				X			Only test if first or second rain events of the year. * Deliver to ABC Labs in Ventura, CA.

Legend A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	1/11/23 1400	H&A		1/11/23 EC
	1/11/23 1910			1/11/23 1910

Turn-around time: (Check)
24 Hour: ____ 72 Hour: ____ 10 Day: ___X___
48 Hour: ____ 5 Day: ____ Normal: ____

Sample Integrity: (Check)
Intact: ____ On Ice: ____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: ____ All Level IV: ___X___

* Hand-delivered to ABC Labs with copy of COC

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2/8/2023

2019-2020 Rainy Season
Version 4

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Monday, January 30, 2023 9:27 AM
To: Virendra Patel
Subject: 200.8 Metals SSFL NPDES

EXTERNAL EMAIL*

Virendra,

Please revise any metals requested as 200.7 to 200.8 for the SSFL NPDES program starting from data collected January 1st, 2023.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123665-1

Login Number: 123665
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/6/2023 12:58:54 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 018 - Comp

JOB NUMBER

570-123665-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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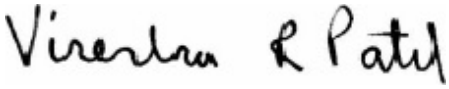
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123665-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123665-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123665-2

Comments
No additional comments.

Receipt
The samples were received on 1/11/2023 7:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.2º C, 1.9º C and 2.1º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: Outfall018_20230111_Comp (570-123665-1), (CCV 320-651543/2) and (MB 320-649091/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Job ID: 570-123665-2

Client Sample ID: Outfall018_20230111_Comp

Lab Sample ID: 570-123665-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,4,7,8-PeCDF	0.00000043	J,DX MB	0.000048	0.00000012	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000022	J,DX MB	0.000048	0.00000023	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.00000053	J,DX MB	0.000048	0.00000024	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.00000058	J,DX MB	0.000048	0.00000009 1	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000028	J,DX MB	0.000048	0.00000008 6	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.00000056	J,DX MB	0.000048	0.00000009 1	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000021	J,DX q MB	0.000048	0.00000008 2	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000021	J,DX MB	0.000048	0.00000015	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.00000085	J,DX MB	0.000048	0.00000015	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.00000034	J,DX q MB	0.000048	0.00000017	ug/L	1		1613B	Total/NA
OCDD	0.000014	J,DX MB	0.000095	0.00000027	ug/L	1		1613B	Total/NA
OCDF	0.0000015	J,DX MB	0.000095	0.00000015	ug/L	1		1613B	Total/NA
Total TCDD	0.0000020	J,DX MB	0.0000095	0.00000024	ug/L	1		1613B	Total/NA
Total TCDF	0.00000036	J,DX MB	0.0000095	0.00000008 5	ug/L	1		1613B	Total/NA
Total PeCDF	0.00000043	J,DX MB	0.000048	0.00000010	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000030	J,DX q MB	0.000048	0.00000021	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000018	J,DX q MB	0.000048	0.00000008 2	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000043	J,DX MB	0.000048	0.00000015	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000015	J,DX q MB	0.000048	0.00000015	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: Outfall018_20230111_Comp
Date Collected: 01/11/23 08:45
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123665-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000095	0.00000024	ug/L		01/25/23 04:38	01/28/23 18:48	1
1,2,3,7,8-PeCDD	ND		0.000048	0.00000020	ug/L		01/25/23 04:38	01/28/23 18:48	1
1,2,3,7,8-PeCDF	ND		0.000048	0.00000010	ug/L		01/25/23 04:38	01/28/23 18:48	1
2,3,4,7,8-PeCDF	**0.00000043**	**J,DX MB**	0.000048	0.00000012	ug/L		01/25/23 04:38	01/28/23 18:48	1
1,2,3,4,7,8-HxCDD	**0.0000022**	**J,DX MB**	0.000048	0.00000023	ug/L		01/25/23 04:38	01/28/23 18:48	1
1,2,3,6,7,8-HxCDD	**0.00000053**	**J,DX MB**	0.000048	0.00000024	ug/L		01/25/23 04:38	01/28/23 18:48	1
1,2,3,7,8,9-HxCDD	ND		0.000048	0.00000021	ug/L		01/25/23 04:38	01/28/23 18:48	1
1,2,3,4,7,8-HxCDF	**0.00000058**	**J,DX MB**	0.000048	0.0000000091	ug/L		01/25/23 04:38	01/28/23 18:48	1
1,2,3,6,7,8-HxCDF	**0.00000028**	**J,DX MB**	0.000048	0.0000000086	ug/L		01/25/23 04:38	01/28/23 18:48	1
1,2,3,7,8,9-HxCDF	**0.00000056**	**J,DX MB**	0.000048	0.0000000091	ug/L		01/25/23 04:38	01/28/23 18:48	1
2,3,4,6,7,8-HxCDF	**0.00000021**	**J,DX q MB**	0.000048	0.0000000082	ug/L		01/25/23 04:38	01/28/23 18:48	1
1,2,3,4,6,7,8-HpCDD	**0.0000021**	**J,DX MB**	0.000048	0.00000015	ug/L		01/25/23 04:38	01/28/23 18:48	1
1,2,3,4,6,7,8-HpCDF	**0.00000085**	**J,DX MB**	0.000048	0.00000015	ug/L		01/25/23 04:38	01/28/23 18:48	1
1,2,3,4,7,8,9-HpCDF	**0.00000034**	**J,DX q MB**	0.000048	0.00000017	ug/L		01/25/23 04:38	01/28/23 18:48	1
OCDD	**0.000014**	**J,DX MB**	0.000095	0.00000027	ug/L		01/25/23 04:38	01/28/23 18:48	1
OCDF	**0.0000015**	**J,DX MB**	0.000095	0.00000015	ug/L		01/25/23 04:38	01/28/23 18:48	1
Total TCDD	**0.0000020**	**J,DX MB**	0.0000095	0.00000024	ug/L		01/25/23 04:38	01/28/23 18:48	1
Total TCDF	**0.00000036**	**J,DX MB**	0.0000095	0.0000000085	ug/L		01/25/23 04:38	01/28/23 18:48	1
Total PeCDD	ND		0.000048	0.00000020	ug/L		01/25/23 04:38	01/28/23 18:48	1
Total PeCDF	**0.00000043**	**J,DX MB**	0.000048	0.00000010	ug/L		01/25/23 04:38	01/28/23 18:48	1
Total HxCDD	**0.0000030**	**J,DX q MB**	0.000048	0.00000021	ug/L		01/25/23 04:38	01/28/23 18:48	1
Total HxCDF	**0.0000018**	**J,DX q MB**	0.000048	0.0000000082	ug/L		01/25/23 04:38	01/28/23 18:48	1
Total HpCDD	**0.0000043**	**J,DX MB**	0.000048	0.00000015	ug/L		01/25/23 04:38	01/28/23 18:48	1
Total HpCDF	**0.0000015**	**J,DX q MB**	0.000048	0.00000015	ug/L		01/25/23 04:38	01/28/23 18:48	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*77*		*25 - 164*	*01/25/23 04:38*	*01/28/23 18:48*	*1*
13C-2,3,7,8-TCDF	*82*		*24 - 169*	*01/25/23 04:38*	*01/28/23 18:48*	*1*
13C-1,2,3,7,8-PeCDD	*77*		*25 - 181*	*01/25/23 04:38*	*01/28/23 18:48*	*1*
13C-1,2,3,7,8-PeCDF	*81*		*24 - 185*	*01/25/23 04:38*	*01/28/23 18:48*	*1*
13C-2,3,4,7,8-PeCDF	*78*		*21 - 178*	*01/25/23 04:38*	*01/28/23 18:48*	*1*
13C-1,2,3,4,7,8-HxCDD	*75*		*32 - 141*	*01/25/23 04:38*	*01/28/23 18:48*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: Outfall018_20230111_Comp
Lab Sample ID: 570-123665-1
Date Collected: 01/11/23 08:45
Matrix: Water
Date Received: 01/11/23 19:10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,6,7,8-HxCDD	83		28 - 130	01/25/23 04:38	01/28/23 18:48	1
13C-1,2,3,4,7,8-HxCDF	77		26 - 152	01/25/23 04:38	01/28/23 18:48	1
13C-1,2,3,6,7,8-HxCDF	87		26 - 123	01/25/23 04:38	01/28/23 18:48	1
13C-1,2,3,7,8,9-HxCDF	90		29 - 147	01/25/23 04:38	01/28/23 18:48	1
13C-2,3,4,6,7,8-HxCDF	92		28 - 136	01/25/23 04:38	01/28/23 18:48	1
13C-1,2,3,4,6,7,8-HpCDD	80		23 - 140	01/25/23 04:38	01/28/23 18:48	1
13C-1,2,3,4,6,7,8-HpCDF	80		28 - 143	01/25/23 04:38	01/28/23 18:48	1
13C-1,2,3,4,7,8,9-HpCDF	84		26 - 138	01/25/23 04:38	01/28/23 18:48	1
13C-OCDD	89		17 - 157	01/25/23 04:38	01/28/23 18:48	1
13C-OCDF	90		17 - 157	01/25/23 04:38	01/28/23 18:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	93		35 - 197	01/25/23 04:38	01/28/23 18:48	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: Outfall018_20230111_Comp
Lab Sample ID: 570-123665-1
Date Collected: 01/11/23 08:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.0000095	0.00000036	ug/L		01/25/23 04:38	02/03/23 18:22	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*75*		*24 - 169*	*01/25/23 04:38*	*02/03/23 18:22*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*106*		*35 - 197*	*01/25/23 04:38*	*02/03/23 18:22*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (35-197)								
570-123665-1	Outfall018_20230111_Comp	93								
570-123665-1 - RA	Outfall018_20230111_Comp	106								
MB 320-649091/1-A	Method Blank	95								
MB 320-649091/1-A - RA	Method Blank	107								

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (31-191)								
LCS 320-649091/2-A	Lab Control Sample	92								
LCSD 320-649091/3-A	Lab Control Sample Dup	93								

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc. Job ID: 570-123665-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-123665-1	Outfall018_20230111_Comp	77	82	77	81	78	75	83	77
570-123665-1 - RA	Outfall018_20230111_Comp		75						
MB 320-649091/1-A	Method Blank	79	84	77	82	83	81	89	84
MB 320-649091/1-A - RA	Method Blank		78						

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-123665-1	Outfall018_20230111_Comp	87	90	92	80	80	84	89	90
570-123665-1 - RA	Outfall018_20230111_Comp								
MB 320-649091/1-A	Method Blank	93	89	93	76	78	81	84	86
MB 320-649091/1-A - RA	Method Blank								

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-649091/2-A	Lab Control Sample	76	80	75	80	79	78	81	76
LCSD 320-649091/3-A	Lab Control Sample Dup	81	86	81	85	83	80	85	80

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-649091/2-A	Lab Control Sample	86	86	88	75	76	79	85	86
LCSD 320-649091/3-A	Lab Control Sample Dup	90	92	93	81	82	87	91	93

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-649091/1-A
Matrix: Water
Analysis Batch: 650047

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 649091

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000024	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,7,8-PeCDD	0.000000800	J,DX	0.000050	0.00000020	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,7,8-PeCDF	0.000000544	J,DX q	0.000050	0.00000015	ug/L		01/25/23 04:38	01/28/23 15:42	1
2,3,4,7,8-PeCDF	0.000000644	J,DX	0.000050	0.00000017	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,4,7,8-HxCDD	0.00000283	J,DX	0.000050	0.00000020	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,6,7,8-HxCDD	0.000000633	J,DX q	0.000050	0.00000020	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,7,8,9-HxCDD	0.000000719	J,DX q	0.000050	0.00000018	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,4,7,8-HxCDF	0.000000820	J,DX	0.000050	0.00000012	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,6,7,8-HxCDF	0.000000777	J,DX q	0.000050	0.00000012	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,7,8,9-HxCDF	0.00000120	J,DX	0.000050	0.00000013	ug/L		01/25/23 04:38	01/28/23 15:42	1
2,3,4,6,7,8-HxCDF	0.000000608	J,DX	0.000050	0.00000011	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,4,6,7,8-HpCDD	0.00000229	J,DX	0.000050	0.00000026	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,4,6,7,8-HpCDF	0.00000121	J,DX q	0.000050	0.00000015	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,4,7,8,9-HpCDF	0.000000899	J,DX	0.000050	0.00000018	ug/L		01/25/23 04:38	01/28/23 15:42	1
OCDD	0.0000158	J,DX q	0.00010	0.00000025	ug/L		01/25/23 04:38	01/28/23 15:42	1
OCDF	0.00000284	J,DX	0.00010	0.00000020	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total TCDD	0.00000396	J,DX q	0.000010	0.00000024	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total TCDF	0.000000659	J,DX q	0.000010	0.00000013	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total PeCDD	0.000000800	J,DX	0.000050	0.00000020	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total PeCDF	0.00000119	J,DX q	0.000050	0.00000015	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total HxCDD	0.00000418	J,DX q	0.000050	0.00000018	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total HxCDF	0.00000341	J,DX q	0.000050	0.00000011	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total HpCDD	0.00000499	J,DX q	0.000050	0.00000026	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total HpCDF	0.00000235	J,DX q	0.000050	0.00000015	ug/L		01/25/23 04:38	01/28/23 15:42	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*79*		*25 - 164*	*01/25/23 04:38*	*01/28/23 15:42*	*1*
13C-2,3,7,8-TCDF	*84*		*24 - 169*	*01/25/23 04:38*	*01/28/23 15:42*	*1*
13C-1,2,3,7,8-PeCDD	*77*		*25 - 181*	*01/25/23 04:38*	*01/28/23 15:42*	*1*
13C-1,2,3,7,8-PeCDF	*82*		*24 - 185*	*01/25/23 04:38*	*01/28/23 15:42*	*1*
13C-2,3,4,7,8-PeCDF	*83*		*21 - 178*	*01/25/23 04:38*	*01/28/23 15:42*	*1*
13C-1,2,3,4,7,8-HxCDD	*81*		*32 - 141*	*01/25/23 04:38*	*01/28/23 15:42*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-649091/1-A
Matrix: Water
Analysis Batch: 650047

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 649091

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,6,7,8-HxCDD	89		28 - 130	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,4,7,8-HxCDF	84		26 - 152	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,6,7,8-HxCDF	93		26 - 123	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,7,8,9-HxCDF	89		29 - 147	01/25/23 04:38	01/28/23 15:42	1
13C-2,3,4,6,7,8-HxCDF	93		28 - 136	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,4,6,7,8-HpCDD	76		23 - 140	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,4,6,7,8-HpCDF	78		28 - 143	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,4,7,8,9-HpCDF	81		26 - 138	01/25/23 04:38	01/28/23 15:42	1
13C-OCDD	84		17 - 157	01/25/23 04:38	01/28/23 15:42	1
13C-OCDF	86		17 - 157	01/25/23 04:38	01/28/23 15:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	95		35 - 197	01/25/23 04:38	01/28/23 15:42	1

Lab Sample ID: LCS 320-649091/2-A
Matrix: Water
Analysis Batch: 650047

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 649091

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000203		ug/L		102	67 - 158
2,3,7,8-TCDF	0.000200	0.000205		ug/L		103	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.000967		ug/L		97	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.000964		ug/L		96	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000993		ug/L		99	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.000925		ug/L		93	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000965		ug/L		97	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000925		ug/L		92	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.000974		ug/L		97	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000945		ug/L		95	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.000954		ug/L		95	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000959		ug/L		96	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.000949		ug/L		95	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.000968		ug/L		97	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000955		ug/L		95	78 - 138
OCDD	0.00200	0.00189		ug/L		94	78 - 144
OCDF	0.00200	0.00197		ug/L		99	63 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	76		20 - 175
13C-2,3,7,8-TCDF	80		22 - 152
13C-1,2,3,7,8-PeCDD	75		21 - 227
13C-1,2,3,7,8-PeCDF	80		21 - 192
13C-2,3,4,7,8-PeCDF	79		13 - 328
13C-1,2,3,4,7,8-HxCDD	78		21 - 193
13C-1,2,3,6,7,8-HxCDD	81		25 - 163
13C-1,2,3,4,7,8-HxCDF	76		19 - 202
13C-1,2,3,6,7,8-HxCDF	86		21 - 159
13C-1,2,3,7,8,9-HxCDF	86		17 - 205

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-649091/2-A
Matrix: Water
Analysis Batch: 650047

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 649091

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,4,6,7,8-HxCDF	88		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	75		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	76		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	79		20 - 186
13C-OCDD	85		13 - 199
13C-OCDF	86		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	92		31 - 191

Lab Sample ID: LCSD 320-649091/3-A
Matrix: Water
Analysis Batch: 650047

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 649091

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000207		ug/L		103	67 - 158	2	50
2,3,7,8-TCDF			0.000200	0.000210		ug/L		105	75 - 158	2	50
1,2,3,7,8-PeCDD			0.00100	0.000981		ug/L		98	70 - 142	1	50
1,2,3,7,8-PeCDF			0.00100	0.00100		ug/L		100	80 - 134	4	50
2,3,4,7,8-PeCDF			0.00100	0.00101		ug/L		101	68 - 160	1	50
1,2,3,4,7,8-HxCDD			0.00100	0.000956		ug/L		96	70 - 164	3	50
1,2,3,6,7,8-HxCDD			0.00100	0.00100		ug/L		100	76 - 134	4	50
1,2,3,7,8,9-HxCDD			0.00100	0.000997		ug/L		100	64 - 162	8	50
1,2,3,4,7,8-HxCDF			0.00100	0.000994		ug/L		99	72 - 134	2	50
1,2,3,6,7,8-HxCDF			0.00100	0.000990		ug/L		99	84 - 130	5	50
1,2,3,7,8,9-HxCDF			0.00100	0.000975		ug/L		97	78 - 130	2	50
2,3,4,6,7,8-HxCDF			0.00100	0.000996		ug/L		100	70 - 156	4	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000985		ug/L		99	70 - 140	4	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00100		ug/L		100	82 - 122	4	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000984		ug/L		98	78 - 138	3	50
OCDD			0.00200	0.00219		ug/L		109	78 - 144	15	50
OCDF			0.00200	0.00206		ug/L		103	63 - 170	4	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	81		20 - 175
13C-2,3,7,8-TCDF	86		22 - 152
13C-1,2,3,7,8-PeCDD	81		21 - 227
13C-1,2,3,7,8-PeCDF	85		21 - 192
13C-2,3,4,7,8-PeCDF	83		13 - 328
13C-1,2,3,4,7,8-HxCDD	80		21 - 193
13C-1,2,3,6,7,8-HxCDD	85		25 - 163
13C-1,2,3,4,7,8-HxCDF	80		19 - 202
13C-1,2,3,6,7,8-HxCDF	90		21 - 159
13C-1,2,3,7,8,9-HxCDF	92		17 - 205
13C-2,3,4,6,7,8-HxCDF	93		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	81		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	82		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	87		20 - 186

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-649091/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 650047 **Prep Batch: 649091**

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-OCDD	91		13 - 199
13C-OCDF	93		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	93		31 - 191

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Lab Sample ID: MB 320-649091/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 651543 **Prep Batch: 649091**

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF - RA	ND		0.000010	0.00000035	ug/L		01/25/23 04:38	02/03/23 17:08	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF - RA	78		24 - 169	01/25/23 04:38	02/03/23 17:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD - RA	107		35 - 197	01/25/23 04:38	02/03/23 17:08	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Specialty Organics

Prep Batch: 649091

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1 - RA	Outfall018_20230111_Comp	Total/NA	Water	1613B	
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	1613B	
MB 320-649091/1-A - RA	Method Blank	Total/NA	Water	1613B	
MB 320-649091/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-649091/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-649091/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 650047

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	1613B	649091
MB 320-649091/1-A	Method Blank	Total/NA	Water	1613B	649091
LCS 320-649091/2-A	Lab Control Sample	Total/NA	Water	1613B	649091
LCSD 320-649091/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	649091

Analysis Batch: 651543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1 - RA	Outfall018_20230111_Comp	Total/NA	Water	1613B	649091
MB 320-649091/1-A - RA	Method Blank	Total/NA	Water	1613B	649091

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Client Sample ID: Outfall018_20230111_Comp
Lab Sample ID: 570-123665-1

Date Collected: 01/11/23 08:45
Matrix: Water
Date Received: 01/11/23 19:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		1048.4 mL	20.0 uL	649091	01/25/23 04:38	FC	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	651543	02/03/23 18:22	GRB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			1048.4 mL	20.0 uL	649091	01/25/23 04:38	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	650047	01/28/23 18:48	GRB	EET SAC
	Instrument ID: 12D5									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23 *
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123665-1	Outfall018_20230111_Comp	Water	01/11/23 08:45	01/11/23 19:10

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s).	COC No: 570-203937 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123665-3
Address: 13715 Rider Trail North	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045	PO #:			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	WO #:			
Email:	Project #: 44024446			
Project Name: Boeing SSFL NPDES - Outfall 018 - Comp	SSOW#:			
Site:				

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Evaporation Gross Alpha/Beta	903.0/PreoSep_21 Radium-226	904.0/PreoSep_0 Radium-228	905_Sr90/PreoSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall0018_20230111_Comp (570-123665-1)	1/11/23	08 45 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I II, III, IV Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

	Relinquished by	Date/Time:	Company	Received by	Date/Time:	Company
	Relinquished by: [signature]	Date/Time: 1/12/23 1312	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-203964 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123665-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/27/2023			
City: West Sacramento	TAT Requested (days):			
State Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - Comp	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall0018_20230111_Comp (570-123665-1)	1/11/23	08 45 Pacific		Water			X		2	See QAS Boeing_w/u to zero ug/L, Use Boeing glassware
Outfall018_20230111_Comp_Extra (570-123665-2)	1/11/23	08 45 Pacific		Water				X	2	See QAS, Boeing_w/u to zero ug/L, Use Boeing glassware

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II III IV Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/12/23 1419	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

123665

Eurofins Calscience Irvine

570-123665 Chain of Custody

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel. 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED															
									R	R	R	R	R	R	R	R	R	R	R	C				
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals (E200.7) Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl- SO_4, Nitrate-N Nitrite-N NO3+NO2-N Perchlorate (E300)	Turbidity TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals Mercury (E245.1)	Total Recoverable Metals (E200.7) Fe			Comments
Outfall 018	Outfall018_20230111_Comp	1/11/2023 0945	WM	500 mL Poly	1	HNO_3	90	No	X										X	X			Outfall 018 analyze for Fe.
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	1L Poly	1	None	115	No			X												
			WM	500 mL Poly	2	None	120	No				X											
			WM	500 mL Poly	2	None	130	No					X										48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X									48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X							
			WM	1 L Glass Amber	2	None	170	No									X						
			WM	1 L Glass Amber	2	None	180	No										X					
			WM	1L Poly	1	None	185	No							X								
	Outfall018_20230111_Comp_Extra	1/11/2023 0845	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	500 mL Poly	2	None	120	No				H											Hold
			WM	500 mL Poly	2	None	130	No					H										Hold
			WM	1 L Glass Amber	2	None	170	No									H						Hold
			WM	1 L Glass Amber	2	None	180	No										H					Hold

Legend: C=Conditional, R=Routine

Relinquished By: Michelle Dallalah	Date/Time: 1/11/23 1400	Company: H&A	Received By:	Date/Time: 1/11/23 1400	EC
Relinquished By:	Date/Time: 1/11/23 1910	EC	Received By:	Date/Time: 1/11/23 1910	
Relinquished By:	Date/Time:	Company:	Received By:	Date/Time:	

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal. _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: ___X___

2.1/2.1 1.2/1.2 1.9/1.9 SCH

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2/6/2023

2019-2020 Rainy Season
Version 4

123665

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R Total Dissolved Metals: (E200.7) Zn (E200.8) Cu, Pb, Cd, Se	R Cyanide (SM4500-CN-E / E335.2)	R Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0) Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA *	R Total Dissolved Metals. Mercury (E245.1)	C Total Dissolved Metals. (E200.7) As, Mn, Fe	Comments
Outfall 018	Outfall018_20230111_Comp_F	1/11/2023 0945	WM	1L Poly	1	None	200	No	X					Filter and preserve w/in 24hrs of receipt at lab. Outfall 018 analyze for Fe.
			WM	borosilicate vials	1	None	320	No					X	Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230111_Comp	1/11/2023 0945 *	WM	500 mL Poly	1	NaOH	220	No		X				
			WM	2.5 Gal Cube	1	None	225	No			X			Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No						
			WM	1 Gal Cube	6	None	235	No				X		Only test if first or second rain events of the year. * Deliver to ABC Labs in Ventura, CA.

Legend A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	1/11/23 1400	H&A		1/11/23 EC
	1/11/23 1910			1/11/23 1910

Turn-around time: (Check)
24 Hour: ____ 72 Hour: ____ 10 Day: ___X___
48 Hour: ____ 5 Day: ____ Normal: ____

Sample Integrity: (Check)
Intact: ____ On Ice: ____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: ____ All Level IV: ___X___

* Hand-delivered to ABC Labs with copy of COC

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2/6/2023

2019-2020 Rainy Season
Version 4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203964.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123665-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/27/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - Comp	Project #: 44024446			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall0018_20230111_Comp (570-123665-1)	1/11/23	08:45 Pacific		Water			X		2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.
Outfall018_20230111_Comp_Extra (570-123665-2)	1/11/23	08:45 Pacific		Water				X	2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/12/23 1419	EC		1.13.23 905	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: Seal	Cooler Temperature(s) °C and Other Remarks: 3.0c

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123665-2

Login Number: 123665
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123665-2

Login Number: 123665
List Number: 3
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 01/13/23 02:43 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.0c 4.4c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/13/2023 3:02:29 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 018 - Comp

JOB NUMBER

570-123665-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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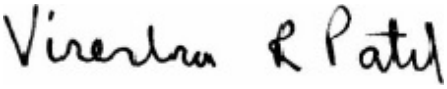
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123665-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123665-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123665-3

Comments
No additional comments.

Receipt
The samples were received on 1/11/2023 7:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.2º C, 1.9º C and 2.1º C.

Receipt Exceptions

The reference method requires samples to be preserved to a pH of <2 SU. The following samples were received with insufficient preservation at a pH of >2 SU: Outfall018_20230111_Comp (570-123665-1), Outfall018_20230111_Comp_Extra (570-123665-2) and Outfall018_20230111_Comp_F (570-123665-3). 570-123665-R-1. The sample was preserved to the appropriate pH in the laboratory.

RAD
Method 900.0: Gross Alpha and Gross Beta batch 597777
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230111_Comp (570-123665-1), (LCS 160-597777/2-A), (LCSB 160-597777/3-A), (MB 160-597777/1-A), (570-123670-K-1-F), (570-123670-K-1-I DU), (570-123670-K-1-G MS) and (570-123670-K-1-H MSBT)

Method 901.1: Gamma Prep Batch 160-597241
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Job ID: 570-123665-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

Outfall018_20230111_Comp (570-123665-1), (570-123234-AI-1-D) and (570-123234-AI-1-E DU)

Method 903.0: Radium-226 batch 598605
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230111_Comp (570-123665-1), (LCS 160-597154/2-A), (LCSD 160-597154/3-A) and (MB 160-597154/1-A)

Method 904.0: Radium-228 batch 597175
The LCS recovered at (126%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCSD 160-597175/3-A)

Method 904.0: Radium-228 batch 597175
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date
Outfall018_20230111_Comp (570-123665-1), (LCS 160-597175/2-A), (LCSD 160-597175/3-A) and (MB 160-597175/1-A)

Method 905: Strontium-90 batch 597176
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230111_Comp (570-123665-1), (LCS 160-597176/2-A), (LCSD 160-597176/3-A) and (MB 160-597176/1-A)

Method 906.0: Tritium 597488
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall018_20230111_Comp (570-123665-1), (LCS 160-597488/2-A), (MB 160-597488/1-A), (570-123038-U-2-B), (570-123038-U-2-C DU), (570-123414-Q-1-B) and (570-123414-Q-1-C MS)

Method A-01-R: Isotopic Uranium batch 597259
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230111_Comp (570-123665-1), (LCS 160-597259/2-A), (MB 160-597259/1-A), (570-123038-A-2-B) and (570-123038-A-2-C DU)

Method PrecSep-7:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Client Sample ID: Outfall018_20230111_Comp
Lab Sample ID: 570-123665-1

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: Outfall018_20230111_Comp
Date Collected: 01/11/23 08:45
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123665-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.784	U	0.927	0.931	3.00	1.52	pCi/L	01/23/23 11:47	01/31/23 08:30	1
Gross Beta	**2.41**		0.667	0.710	4.00	0.776	pCi/L	01/23/23 11:47	01/31/23 08:30	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: Outfall018_20230111_Comp
Date Collected: 01/11/23 08:45
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123665-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-4.92	U	8.65	8.67	20.0	10.3	pCi/L	01/17/23 13:13	02/07/23 01:25	1
Potassium-40	-15.3	U	99.1	99.1		124	pCi/L	01/17/23 13:13	02/07/23 01:25	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: Outfall018_20230111_Comp
Date Collected: 01/11/23 08:45
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123665-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00663	U	0.0415	0.0415	1.00	0.0846	pCi/L	01/17/23 10:52	02/08/23 09:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.2*		*40 - 110*	*01/17/23 10:52*	*02/08/23 09:40*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: Outfall018_20230111_Comp **Lab Sample ID: 570-123665-1**
Date Collected: 01/11/23 08:45 **Matrix: Water**
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.407	U	0.304	0.306	1.00	0.461	pCi/L	01/17/23 11:26	01/24/23 11:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.2*		*40 - 110*	*01/17/23 11:26*	*01/24/23 11:29*	*1*
Y Carrier	*86.4*		*40 - 110*	*01/17/23 11:26*	*01/24/23 11:29*	*1*

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: Outfall018_20230111_Comp **Lab Sample ID: 570-123665-1**
Date Collected: 01/11/23 08:45 **Matrix: Water**
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.270	U	0.217	0.218	3.00	0.340	pCi/L	01/17/23 11:33	01/26/23 17:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*80.3*		*40 - 110*	*01/17/23 11:33*	*01/26/23 17:47*	*1*
Y Carrier	*72.1*		*40 - 110*	*01/17/23 11:33*	*01/26/23 17:47*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: Outfall018_20230111_Comp
Lab Sample ID: 570-123665-1
Date Collected: 01/11/23 08:45
Matrix: Water
Date Received: 01/11/23 19:10

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-13.5	U	164	164	500	300	pCi/L	01/19/23 12:02	01/21/23 01:14	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: Outfall018_20230111_Comp
Date Collected: 01/11/23 08:45
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123665-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.163		0.1438	0.1440	1.00	0.143	pCi/L	01/17/23 16:09	01/25/23 14:47	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*75.5*		*30 - 110*	*01/17/23 16:09*	*01/25/23 14:47*	*1*

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
570-123665-1	Outfall018_20230111_Comp	92.2
LCS 160-597154/2-A	Lab Control Sample	87.7
LCSD 160-597154/3-A	Lab Control Sample Dup	91.3
MB 160-597154/1-A	Method Blank	94.7

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-123665-1	Outfall018_20230111_Comp	92.2	86.4
LCS 160-597175/2-A	Lab Control Sample	87.7	82.6
LCSD 160-597175/3-A	Lab Control Sample Dup	91.3	81.9
MB 160-597175/1-A	Method Blank	94.7	84.5

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-123665-1	Outfall018_20230111_Comp	80.3	72.1
LCS 160-597176/2-A	Lab Control Sample	82.2	72.1
LCSD 160-597176/3-A	Lab Control Sample Dup	82.8	70.3
MB 160-597176/1-A	Method Blank	79.4	74.0

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-123038-A-2-C DU	Duplicate	86.2
570-123665-1	Outfall018_20230111_Comp	75.5
LCS 160-597259/2-A	Lab Control Sample	87.1
MB 160-597259/1-A	Method Blank	85.3

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-597777/1-A
Matrix: Water
Analysis Batch: 598614

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597777

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.08001	U	0.636	0.636	3.00	1.19	pCi/L	01/23/23 11:47	01/30/23 19:04	1
Gross Beta	-0.2904	U	0.420	0.421	4.00	0.816	pCi/L	01/23/23 11:47	01/30/23 19:04	1

Lab Sample ID: LCS 160-597777/2-A
Matrix: Water
Analysis Batch: 598614

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597777

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	51.22		7.48	3.00	2.46	pCi/L	101	75 - 125

Lab Sample ID: LCSB 160-597777/3-A
Matrix: Water
Analysis Batch: 598614

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597777

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.7	67.77		7.31	4.00	0.875	pCi/L	92	75 - 125

Lab Sample ID: 570-123670-K-1-G MS
Matrix: Water
Analysis Batch: 598850

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 597777

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	0.308	U	50.5	50.97		7.16	3.00	1.38	pCi/L	100	60 - 140

Lab Sample ID: 570-123670-K-1-H MSBT
Matrix: Water
Analysis Batch: 598850

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 597777

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	2.89		73.7	75.66		8.09	4.00	0.820	pCi/L	99	60 - 140

Lab Sample ID: 570-123670-K-1-I DU
Matrix: Water
Analysis Batch: 598850

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597777

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	0.308	U	1.179	U	0.892	3.00	1.28	pCi/L	0.51	1
Gross Beta	2.89		2.634		0.775	4.00	0.892	pCi/L	0.16	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-597241/1-A
Matrix: Water
Analysis Batch: 599334

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597241

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-2.826	U	8.51	8.52	20.0	10.3	pCi/L	01/17/23 13:03	02/03/23 22:10	1
Potassium-40	-36.61	U	86.6	86.7		115	pCi/L	01/17/23 13:03	02/03/23 22:10	1

Lab Sample ID: LCS 160-597241/2-A
Matrix: Water
Analysis Batch: 599336

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597241

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	138000		16400		297	pCi/L	102	75 - 125
Cesium-137	41000	42160		5020	20.0	79.9	pCi/L	103	75 - 125
Cobalt-60	18200	18990		2260		44.3	pCi/L	105	75 - 125

Lab Sample ID: 570-123234-AI-1-E DU
Matrix: Water
Analysis Batch: 599354

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597241

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	-5.12	U	-0.5107	U	7.06	20.0	8.40	pCi/L	0.29	1
Potassium-40	-33.9	U	67.97		68.0		67.4	pCi/L	0.58	1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-597154/1-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597154

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.006957	U	0.0458	0.0458	1.00	0.0910	pCi/L	01/17/23 10:52	02/08/23 09:29	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.7*		*40 - 110*	*01/17/23 10:52*	*02/08/23 09:29*	*1*

Lab Sample ID: LCS 160-597154/2-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597154

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	11.79		1.20	1.00	0.0822	pCi/L	104	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*87.7*		*40 - 110*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-597154/3-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597154

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	11.35		1.16	1.00	0.0760	pCi/L	100	75 - 125	0.19	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*91.3*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-597175/1-A
Matrix: Water
Analysis Batch: 598066

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597175

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.05046	U	0.253	0.253	1.00	0.464	pCi/L	01/17/23 11:26	01/24/23 11:23	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.7*		*40 - 110*	*01/17/23 11:26*	*01/24/23 11:23*	*1*
Y Carrier	*84.5*		*40 - 110*	*01/17/23 11:26*	*01/24/23 11:23*	*1*

Lab Sample ID: LCS 160-597175/2-A
Matrix: Water
Analysis Batch: 598066

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597175

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.25	9.815		1.34	1.00	0.590	pCi/L	119	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*87.7*		*40 - 110*
Y Carrier	*82.6*		*40 - 110*

Lab Sample ID: LCSD 160-597175/3-A
Matrix: Water
Analysis Batch: 598066

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597175

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.25	10.40		1.37	1.00	0.516	pCi/L	126	75 - 125	0.21	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*91.3*		*40 - 110*
Y Carrier	*81.9*		*40 - 110*

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-597176/1-A
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597176

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.03721	U	0.223	0.223	3.00	0.408	pCi/L	01/17/23 11:33	01/26/23 17:45	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*79.4*		*40 - 110*	*01/17/23 11:33*	*01/26/23 17:45*	*1*
Y Carrier	*74.0*		*40 - 110*	*01/17/23 11:33*	*01/26/23 17:45*	*1*

Lab Sample ID: LCS 160-597176/2-A
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597176

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.38	7.564		0.882	3.00	0.355	pCi/L	103	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*82.2*		*40 - 110*
Y Carrier	*72.1*		*40 - 110*

Lab Sample ID: LCSD 160-597176/3-A
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597176

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.38	7.695		0.910	3.00	0.459	pCi/L	104	75 - 125	0.07	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*82.8*		*40 - 110*
Y Carrier	*70.3*		*40 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-597488/1-A
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597488

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-84.68	U	164	165	500	326	pCi/L	01/19/23 12:02	01/20/23 20:22	1

Lab Sample ID: LCS 160-597488/2-A
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597488

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2120	1848		381	500	324	pCi/L	87	75 - 125		

Method: 906.0 - Tritium, Total (LSC) (Continued)

Lab Sample ID: 570-123414-Q-1-C MS
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 597488

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium	-26.1	U	2120	1947		376	500	297	pCi/L	92	60 - 140		

Lab Sample ID: 570-123038-U-2-C DU
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597488

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Tritium	-83.3	U		-97.75	U	162	500	324	pCi/L			0.05	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-597259/1-A
Matrix: Water
Analysis Batch: 598217

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597259

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.05873	U	0.09433	0.09455	1.00	0.172	pCi/L	01/17/23 16:09	01/25/23 14:42	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*85.3*		*30 - 110*	*01/17/23 16:09*	*01/25/23 14:42*	*1*

Lab Sample ID: LCS 160-597259/2-A
Matrix: Water
Analysis Batch: 598218

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597259

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	12.19		1.46	1.00	0.151	pCi/L	96	75 - 125		
Uranium-238			13.0	13.33		1.56	1.00	0.135	pCi/L	102	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*87.1*		*30 - 110*

Lab Sample ID: 570-123038-A-2-C DU
Matrix: Water
Analysis Batch: 598230

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597259

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Total Uranium	0.128			0.07847	U	0.1118	1.00	0.163	pCi/L			0.22	1

Tracer	*DU %Yield*	*DU Qualifier*	*Limits*
Uranium-232	*86.2*		*30 - 110*

Rad

Prep Batch: 597154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	PrecSep-21	
MB 160-597154/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-597154/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-597154/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 597175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	PrecSep_0	
MB 160-597175/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-597175/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-597175/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 597176

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	PrecSep-7	
MB 160-597176/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-597176/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-597176/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 597241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	Fill_Geo-0	
MB 160-597241/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-597241/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-123234-AI-1-E DU	Duplicate	Total/NA	Water	Fill_Geo-0	

Prep Batch: 597259

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	ExtChrom	
MB 160-597259/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-597259/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-123038-A-2-C DU	Duplicate	Total/NA	Water	ExtChrom	

Prep Batch: 597488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	LSC_Dist_Susp	
MB 160-597488/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-597488/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
570-123414-Q-1-C MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
570-123038-U-2-C DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 597777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123665-1	Outfall018_20230111_Comp	Total/NA	Water	Evaporation	
MB 160-597777/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-597777/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-597777/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-123670-K-1-G MS	Matrix Spike	Total/NA	Water	Evaporation	
570-123670-K-1-H MSBT	Matrix Spike	Total/NA	Water	Evaporation	
570-123670-K-1-I DU	Duplicate	Total/NA	Water	Evaporation	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Client Sample ID: Outfall018_20230111_Comp
Lab Sample ID: 570-123665-1
Date Collected: 01/11/23 08:45
Matrix: Water
Date Received: 01/11/23 19:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Evaporation			200.01 mL	1.0 g	597777	01/23/23 11:47	MST	EET SL
Total/NA	Analysis	900.0		1			598850	01/31/23 08:30	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	597241	01/17/23 13:13	JML	EET SL
Total/NA	Analysis	901.1		1			599501	02/07/23 01:25	EMH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	PrecSep-21			994.13 mL	1.0 g	597154	01/17/23 10:52	DJP	EET SL
Total/NA	Analysis	903.0		1			599672	02/08/23 09:40	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			994.13 mL	1.0 g	597175	01/17/23 11:26	DJP	EET SL
Total/NA	Analysis	904.0		1			598066	01/24/23 11:29	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-7			1003.30 mL	1.0 g	597176	01/17/23 11:33	DJP	EET SL
Total/NA	Analysis	905		1			598283	01/26/23 17:47	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	LSC_Dist_Susp			100.69 mL	1.0 g	597488	01/19/23 12:02	ZR	EET SL
Total/NA	Analysis	906.0		1			597784	01/21/23 01:14	REV	EET SL
	Instrument ID: LSCAQUA									
Total/NA	Prep	ExtChrom			500.14 mL	1.0 mL	597259	01/17/23 16:09	SAC	EET SL
Total/NA	Analysis	A-01-R		1			598253	01/25/23 14:47	FLC	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 570-123665-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	02-09-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123665-1	Outfall018_20230111_Comp	Water	01/11/23 08:45	01/11/23 19:10

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s).	COC No: 570-203937 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123665-3
Address: 13715 Rider Trail North	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045	PO #:			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	WO #:			
Email:	Project #: 44024446			
Project Name: Boeing SSFL NPDES - Outfall 018 - Comp	SSOW#:			
Site:				

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Evaporation Gross Alpha/Beta	903.0/PreoSep_21 Radium-226	904.0/PreoSep_0 Radium-228	905_Sr90/PreoSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall0018_20230111_Comp (570-123665-1)	1/11/23	08 45 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/12/23 1312				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

2/13/2023

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-203964 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123665-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/27/2023			
City: West Sacramento	TAT Requested (days):			
State Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - Comp	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall0018_20230111_Comp (570-123665-1)	1/11/23	08 45 Pacific		Water			X		2	See QAS Boeing_w/u to zero ug/L, Use Boeing glassware
Outfall018_20230111_Comp_Extra (570-123665-2)	1/11/23	08 45 Pacific		Water				X	2	See QAS, Boeing_w/u to zero ug/L, Use Boeing glassware

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II III IV Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/12/23 1419	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

2/13/2023

123665

Eurofins Calscience Irvine

570-123665 Chain of Custody

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel. 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Project Manager:** Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	**Field Manager:** Mark Dominick 978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	ANALYSIS REQUIRED: Total Recoverable Metals (E200.7) Zn (E200.8): Cu, Pb, Cd, Se (R)	TCDD (and all congeners) (E1613B) (R)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc)) (R)	Surfactants (MBAS) (SM5540C/E425.1) (R)	Cl- SO_4, Nitrate-N Nitrite-N NO3+NO2-N Perchlorate (E300) (R)	Turbidity TDS (SM2540C/E180.1) (R)	TSS (160.2 (SM2540D)) (R)	Ammonia-N (350.2) (R)	alpha-BHC (E608) (R)	2,4,6 TCP 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625) (R)	Total Recoverable Metals Mercury (E245.1) (C)	Total Recoverable Metals (E200.7) Fe		Comments
Outfall 018	Outfall018_20230111_Comp	1/11/2023 0945	WM	500 mL Poly	1	HNO_3	90	No	X										X	X		Outfall 018 analyze for Fe.
			WM	1 L Glass Amber	2	None	110	No		X												
			WM	1L Poly	1	None	115	No			X											
			WM	500 mL Poly	2	None	120	No				X										
			WM	500 mL Poly	2	None	130	No					X									48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X								48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X						
			WM	1 L Glass Amber	2	None	170	No									X					
			WM	1 L Glass Amber	2	None	180	No										X				
			WM	1L Poly	1	None	185	No							X							
	Outfall018_20230111_Comp_Extra	1/11/2023 0845	WM	1 L Glass Amber	2	None	110	No		H												Hold
			WM	500 mL Poly	2	None	120	No				H										Hold
			WM	500 mL Poly	2	None	130	No					H									Hold
			WM	1 L Glass Amber	2	None	170	No									H					Hold
			WM	1 L Glass Amber	2	None	180	No										H				Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	1/11/23 1400	H&A		1/11/23 1400 EC
	1/11/23 1910 EC			1/11/23 1910

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal. _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: __X__

2.1/2.1 1.2/1.2 1.9/1.9 SCH

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2/13/2023

2019-2020 Rainy Season
Version 4

123665

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R: Total Dissolved Metals: (E200.7) Zn (E200.8) Cu, Pb, Cd, Se	R: Cyanide (SM4500-CN-E / E335.2)	R: Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0) Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R: Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA *	R: Total Dissolved Metals. Mercury (E245.1)	C: Total Dissolved Metals. (E200.7) As, Mn, Fe	Comments
Outfall 018	Outfall018_20230111_Comp_F	1/11/2023 0945	WM	1L Poly	1	None	200	No	X					X	Filter and preserve w/in 24hrs of receipt at lab. Outfall 018 analyze for Fe.
			WM	borosilicate vials	1	None	320	No					X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230111_Comp	1/11/2023 0945 *	WM	500 mL Poly	1	NaOH	220	No		X					
			WM	2.5 Gal Cube	1	None	225	No			X				Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No							
			WM	1 Gal Cube	6	None	235	No				X			Only test if first or second rain events of the year. * Deliver to ABC Labs in Ventura, CA.

Legend A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	1/11/23 1400	H&A		1/11/23 EC
	1/11/23 1910			1/11/23 1910

Turn-around time: (Check)
24 Hour: ____ 72 Hour: ____ 10 Day: ___X___
48 Hour: ____ 5 Day: ____ Normal: ____

Sample Integrity: (Check)
Intact: ____ On Ice: ____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: ____ All Level IV: ___X___

* Hand-delivered to ABC Labs with copy of COC

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2/13/2023

2019-2020 Rainy Season
Version 4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203937.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123665-3
Address: 13715 Rider Trail North, ,	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - Comp	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/Fil_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Evaporation Gross Alpha/Beta	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall0018_20230111_Comp (570-123665-1)	1/11/23	08:45 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature] FEDEX	1/12/23 1312		FEDEX		
2	Relinquished by: FEDEX	Date/Time:	Company	Received by: [signature]	Date/Time: 1/13/23 900 am	Company ETAST
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203937.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123665-3
Address: 13715 Rider Trail North, ,	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - Comp	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Evaporation Gross Alpha/Beta	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall0018_20230111_Comp (570-123665-1)	1/11/23	08:45 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature] FEDEX	1/12/23 1312		FEDEX		
2	Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 1/13/23 900 Am	Company ETAS TL
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123665-3

Login Number: 123665
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123665-3

Login Number: 123665
List Number: 2
Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis
List Creation: 01/13/23 03:20 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/3/2023 12:41:28 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 018 - Comp

JOB NUMBER

570-123665-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization

Virendra R Patil

Generated
2/3/2023 12:41:28 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-123665-4
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123665-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123665-4

Comments
No additional comments.

Receipt
The samples were received on 1/11/2023 7:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.2º C, 1.9º C and 2.1º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Chronic-Selenestrum: This method was subcontracted to Aquatic Bioassay & Consulting. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-4
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method	Method Description	Protocol	Laboratory
Subcontract	Chronic-Selenestrum	None	Aquatic

Protocol References:

None = None

Laboratory References:

Aquatic = Aquatic Bioassay & Consulting, 29 North Olive Street, Ventura, CA 93001

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123665-4
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123665-1	Outfall018_20230111_Comp	Water	01/11/23 08:45	01/11/23 19:10

aquatic bioassay & consulting laboratories, inc

January 25, 2023

Mr. Virendra Patel
Eurofins Calscience
7440 Lincoln Way
Garden Grove, CA 92841-1432

Dear Mr. Patel:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA-821-R-02-013.* Results were as follows:

CLIENT:	Eurofins Calscience
SAMPLE I.D.:	Outfall018_20230111_Comp
DATE RECEIVED:	11 Jan - 2023
ABC LAB. NO.:	CSE0123.069

CHRONIC SELENASTRUM ALGAE GROWTH BIOASSAY

IWC = 100.00 %

TST RESULT

GROWTH = PASS % EFFECT = -30.48 %

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 20 Jan-23 16:23 (p 1 of 1)
Test Code/ID: CSE0123.069 / 02-1858-7286

Selenastrum Growth Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	12-6260-0246	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	12 Jan-23 13:18	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	16 Jan-23 12:00	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Test Length:	95h	**Taxon:**	Chlorophyta	**Source:**	Aquatic Biosystems, CO **Age:** 7d
Sample ID:	14-5482-7088	**Code:**	CSE0123.069	**Project:**	Boeing-SSFL NPDES
Sample Date:	11 Jan-23 08:45	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	11 Jan-23 14:25	**CAS (PC):**		**Station:**	Outfall018_20230111_Comp
Sample Age:	29h (1.5 °C)	**Client:**	Eurofins Calscience		

SIngle Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
18-2682-5850	Cell Density	TST-Welch's t Test	<1.0E-05	100% passed cell density	1

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
18-2682-5850	Cell Density	Control CV	0.06034	<<	0.2	Yes	Passes Criteria
18-2682-5850	Cell Density	Control Resp	1.14E+6	1.00E+6	<<	Yes	Passes Criteria

Cell Density Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	8	1.136E+6	1.079E+6	1.194E+6	1.033E+6	1.214E+6	2.424E+4	6.857E+4	6.03%	0.00%
100		8	1.483E+6	1.427E+6	1.539E+6	1.416E+6	1.590E+6	2.354E+4	6.658E+4	4.49%	-30.48%

Cell Density Detail — MD5: 384174E7D08B883033B21C4D6A3B8550

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
0	N	1.195E+6	1.033E+6	1.044E+6	1.105E+6	1.214E+6	1.158E+6	1.159E+6	1.184E+6
100		1.458E+6	1.434E+6	1.433E+6	1.442E+6	1.416E+6	1.555E+6	1.535E+6	1.590E+6

CETIS Analytical Report

Selenastrum Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	18-2682-5850	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	20 Jan-23 16:22	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	20 Jan-23 16:20	**MD5 Hash:**	384174E7D08B883033B21C4D6A3B8550	**Editor ID:**	009-702-627-3
Batch ID:	12-6260-0246	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	12 Jan-23 13:18	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	16 Jan-23 12:00	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Test Length:	95h	**Taxon:**	Chlorophyta	**Source:**	Aquatic Biosystems, CO **Age:** 7d
Sample ID:	14-5482-7088	**Code:**	CSE0123.069	**Project:**	Boeing-SSFL NPDES
Sample Date:	11 Jan-23 08:45	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	11 Jan-23 14:25	**CAS (PC):**		**Station:**	Outfall018_20230111_Comp
Sample Age:	29h (1.5 °C)	**Client:**	Eurofins Calscience		

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	100% passed cell density endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(α:25%)
Negative Control		100*	13	21.2	0.6938	CDF	<1.0E-05	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.06034	<<	0.2	Yes	Passes Criteria
Control Resp	1.14E+6	1.00E+6	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	4.799E+11	4.799E+11	1	105.1	<1.0E-05	Significant Effect
Error	6.395E+10	4.568E+09	14			
Total	5.438E+11		15			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Levene Equality of Variance Test	0.00465	8.862	0.9466	Equal Variances
	Mod Levene Equality of Variance Test	2.58E-05	8.862	0.9960	Equal Variances
	Variance Ratio F Test	1.061	8.885	0.9401	Equal Variances
Distribution	Anderson-Darling A2 Test	0.4286	3.878	0.3149	Normal Distribution
	D'Agostino Skewness Test	0.007535	2.576	0.9940	Normal Distribution
	Kolmogorov-Smirnov D Test	0.1484	0.2471	0.4739	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9472	0.8408	0.4460	Normal Distribution

Cell Density Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	8	1.136E+6	1.079E+6	1.194E+6	1.158E+6	1.033E+6	1.214E+6	2.424E+4	6.03%	0.00%
100		8	1.483E+6	1.427E+6	1.539E+6	1.450E+6	1.416E+6	1.590E+6	2.354E+4	4.49%	-30.48%

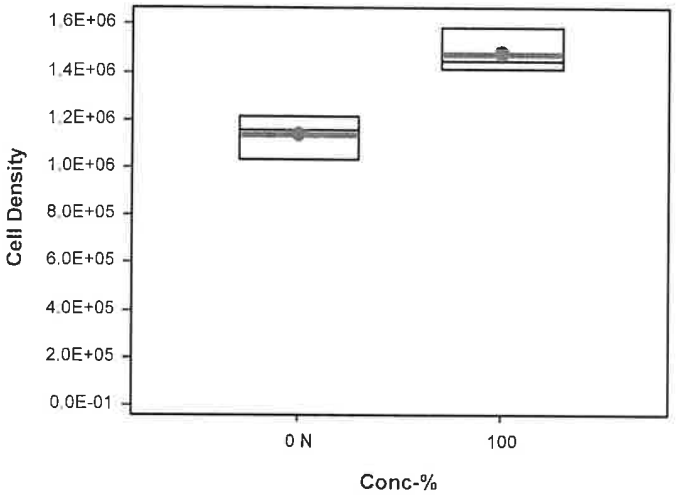
Cell Density Detail

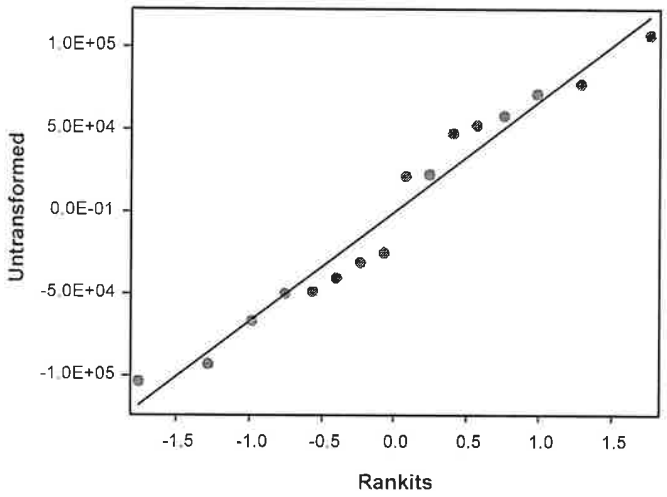
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
0	N	1.195E+6	1.033E+6	1.044E+6	1.105E+6	1.214E+6	1.158E+6	1.159E+6	1.184E+6
100		1.458E+6	1.434E+6	1.433E+6	1.442E+6	1.416E+6	1.555E+6	1.535E+6	1.590E+6

Selenastrum Growth Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	18-2682-5850	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	20 Jan-23 16:22	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	20 Jan-23 16:20	**MD5 Hash:**	384174E7D08B883033B21C4D6A3B8550	**Editor ID:**	009-702-627-3

Graphics





CETIS Measurement Report

Report Date: 20 Jan-23 16:23 (p 1 of 1)
Test Code/ID: CSE0123.069 / 02-1858-7286

Selenastrum Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	12-6260-0246	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	12 Jan-23 13:18	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	16 Jan-23 12:00	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Test Length:	95h	**Taxon:**	Chlorophyta	**Source:**	Aquatic Biosystems, CO **Age:** 7d
Sample ID:	14-5482-7088	**Code:**	CSE0123.069	**Project:**	Boeing-SSFL NPDES
Sample Date:	11 Jan-23 08:45	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	11 Jan-23 14:25	**CAS (PC):**		**Station:**	Outfall018_20230111_Comp
Sample Age:	29h (1.5 °C)	**Client:**	Eurofins Calscience		

Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	1	77	---	---	77	77	---	---	---	0
100		1	54	---	---	54	54	---	---	---	0
Overall		2	65.5	-80.62	211.6	54	77	11.5	16.26	24.83%	0 (0%)

Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	497.6	487.7	507.5	489	510	1.591	7.956	1.60%	0
100		5	480.4	465.9	494.9	472	501	2.339	11.7	2.43%	0
Overall		10	489	479.6	498.4	472	510	4.137	13.08	2.68%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	1	118	---	---	118	118	---	---	---	0
100		1	95	---	---	95	95	---	---	---	0
Overall		2	106.5	-39.62	252.6	95	118	11.5	16.26	15.27%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	7.96	7.849	8.071	7.8	8	0.01789	0.08944	1.12%	0
100		5	7.86	7.749	7.971	7.7	7.9	0.01789	0.08943	1.14%	0
Overall		10	7.91	7.839	7.981	7.7	8	0.03145	0.09944	1.26%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
100		5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
Overall		10	25.28	25.13	25.43	25	25.5	0.06464	0.2044	0.81%	0 (0%)

869

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Temp. deg. C = 1.5 °C

2/3/2023

Chlorine (mg/L) = <0.1

NH3 (mg/L) = 40.1

Client Name/Address:	Project:	ANALYSIS REQUIRED
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp	
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218		
TestAmerica's services under this COC shall be performed in accordance with the T&Cs within Blanket Service Agreement 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	

Sample Description	Sample I D	Sampling Date/Time	Sample Matrix	Container Type	# of Cont	Preservative	Bottle #	MS/MSD	R Total Dissolved Metals (E200.7) Zn (E200.8) Cu, Pb, Cd, Se	R Cyanide (SM4500-CN-E / E335.2)	R Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R Chronic Toxicity - Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA	R Total Dissolved Metals Mercury (E245.1)	Total Dissolved Metals (E200.7) As, Mn, Fe	Comments
Outfall 018	Outfall018_20230111_Comp_F	1/11/2023 1045	WM	1L Poly	1	None	200	No	X					X	Filter and preserve w/in 24hrs of receipt at lab Outfall 018 analyze for Fe
			WM	borosilicate vials	1	None	320	No					X		Sample receiving DO NOT OPEN BAG Bag to be opened in Mercury Prep using clean procedures
	Outfall018_20230111_Comp	1/11/2023 1045	WM	500 mL Poly	1	NaOH	220	No		X					
			WM	2.5 Gal Cube	1	None	225	No			X				Unfiltered and unpreserved analysis Separate RAD onto another workorder Analyze duplicate, not MS/MSD
				1 L Glass Amber	1	None	230	No							
			WM	1 Gal Cube	6	None	235	No				X			Only test if fist or second rain events of the year, Deliver to ABC Labs in Ventura, CA

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time	Company	Received By	Date/Time
M Dominick	1-11-2023 / 1425	H:A	Victor Mgr	1.11.23 1425
Relinquished By	Date/Time	Company	Received By	Date/Time
Relinquished By	Date/Time	Company	Received By	Date/Time

Turn-around time (Check)
24 Hour: _____ 72 Hour _____ 10 Day ___X___
48 Hour: _____ 5 Day: _____ Normal _____

Sample Integrity (Check)
Intact: _____ On Ice _____
Store samples for 6 months

Data Requirements (Check)
No Level IV: _____ All Level IV ___X___

* Hand delivered to ABC Labs with copy of COC

aquatic bioassay & consulting laboratories, inc

CHRONIC SELENASTRUM GROWTH BIOASSAY

DATE: 12 January - 2023

STANDARD TOXICANT: Cadmium Chloride

NOEC = 20.00 ug/l

IC25 = 53.36 ug/l
IC50 = 102.30 ug/l

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 20 Jan-23 16:52 (p 1 of 1)
Test Code/ID: SEL011223 / 04-7405-9726

Selenastrum Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	19-4179-0418	Test Type:	Cell Growth	Analyst:	
Start Date:	12 Jan-23 13:24	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	16 Jan-23 13:10	Species:	Selenastrum capricornutum	Brine:	Not Applicable
Test Length:	96h	Taxon:	Chlorophyta	Source:	Aquatic Biosystems, CO Age: 7d
Sample ID:	01-0315-3386	Code:	SEL011223	Project:	REF TOX
Sample Date:	12 Jan-23 13:24	Material:	Cadmium chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	Internal Lab		

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	S
02-3719-8182	Cell Density	Dunnett Multiple Comparison Test		20	40	28.28	4.66%	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓	Level	µg/L	95% LCL	95% UCL	S
05-1997-3179	Cell Density	Linear Interpolation (ICPIN)		IC15	34.55	31.57	37.91	1
				IC20	39.4	35.65	48.58	
				IC25	53.36	40.71	62.3	
				IC40	88.59	84.67	92.36	
				IC50	102.3	99.22	105.6	

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
02-3719-8182	Cell Density	Control CV	0.03087	<<	0.2	Yes	Passes Criteria
05-1997-3179	Cell Density	Control CV	0.03087	<<	0.2	Yes	Passes Criteria
02-3719-8182	Cell Density	Control Resp	1.06E+6	1.00E+6	<<	Yes	Passes Criteria
05-1997-3179	Cell Density	Control Resp	1.06E+6	1.00E+6	<<	Yes	Passes Criteria

Cell Density Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	4	1.057E+6	1.005E+6	1.109E+6	1.033E+6	1.105E+6	1.631E+4	3.262E+4	3.09%	0.00%
20		4	1.091E+6	1.026E+6	1.156E+6	1.040E+6	1.131E+6	2.040E+4	4.080E+4	3.74%	-3.26%
40		4	8.525E+5	8.034E+5	9.016E+5	8.250E+5	8.890E+5	1.541E+4	3.083E+4	3.62%	19.33%
80		4	7.118E+5	6.788E+5	7.447E+5	6.940E+5	7.330E+5	1.035E+4	2.069E+4	2.91%	32.65%
140		4	2.412E+5	1.995E+5	2.830E+5	2.190E+5	2.790E+5	1.312E+4	2.623E+4	10.87%	77.17%
180		4	1.472E+5	1.228E+5	1.717E+5	1.320E+5	1.610E+5	7.696E+3	1.539E+4	10.45%	86.07%

Cell Density Detail

MD5: 8002C18F242E2CF77D044A91E3CE4461

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.045E+6	1.033E+6	1.044E+6	1.105E+6
20		1.131E+6	1.078E+6	1.116E+6	1.040E+6
40		8.670E+5	8.290E+5	8.250E+5	8.890E+5
80		6.940E+5	7.330E+5	6.940E+5	7.260E+5
140		2.190E+5	2.370E+5	2.300E+5	2.790E+5
180		1.360E+5	1.610E+5	1.600E+5	1.320E+5

CETIS Analytical Report

Report Date: 20 Jan-23 16:52 (p 1 of 2)
Test Code/ID: SEL011223 / 04-7405-9726

Selenastrum Growth Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	02-3719-8182	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	20 Jan-23 16:51	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Edit Date:	20 Jan-23 16:48	**MD5 Hash:**	8002C18F242E2CF77D044A91E3CE4461	**Editor ID:**	009-702-627-3
Batch ID:	19-4179-0418	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	12 Jan-23 13:24	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	16 Jan-23 13:10	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Test Length:	96h	**Taxon:**	Chlorophyta	**Source:**	Aquatic Biosystems, CO **Age:** 7d
Sample ID:	01-0315-3386	**Code:**	SEL011223	**Project:**	REF TOX
Sample Date:	12 Jan-23 13:24	**Material:**	Cadmium chloride	**Source:**	Reference Toxicant
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	Internal Lab		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Untransformed	C > T	20	40	28.28	---	49300	4.66%

Dunnett Multiple Comparison Test

Control	vs	Conc-µg/L	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(α:5%)
Negative Control		20	6	-1.685	2.407	49300	CDF	0.9976	Non-Significant Effect
		40*	6	9.973	2.407	49300	CDF	2.7E-05	Significant Effect
		80*	6	16.85	2.407	49300	CDF	2.7E-05	Significant Effect
		140*	6	39.82	2.407	49300	CDF	2.7E-05	Significant Effect
		180*	6	44.41	2.407	49300	CDF	2.7E-05	Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.03087	<<	0.2	Yes	Passes Criteria
Control Resp	1.06E+6	1.00E+6	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	3.272E+12	6.545E+11	5	780.2	<1.0E-05	Significant Effect
Error	1.51E+10	838820000	18			
Total	3.287E+12		23			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	2.884	15.09	0.7178	Equal Variances
	Levene Equality of Variance Test	1.242	4.248	0.3306	Equal Variances
	Mod Levene Equality of Variance Test	0.6992	4.248	0.6311	Equal Variances
Distribution	Anderson-Darling A2 Test	0.7994	3.878	0.0381	Normal Distribution
	D'Agostino Kurtosis Test	0.7357	2.576	0.4619	Normal Distribution
	D'Agostino Skewness Test	0.6079	2.576	0.5433	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	0.9108	9.21	0.6342	Normal Distribution
	Kolmogorov-Smirnov D Test	0.2114	0.2056	0.0070	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.9401	0.884	0.1636	Normal Distribution

Cell Density Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	1.057E+6	1.005E+6	1.109E+6	1.044E+6	1.033E+6	1.105E+6	1.631E+4	3.09%	0.00%
20		4	1.091E+6	1.026E+6	1.156E+6	1.097E+6	1.040E+6	1.131E+6	2.040E+4	3.74%	-3.26%
40		4	8.525E+5	8.034E+5	9.016E+5	8.480E+5	8.250E+5	8.890E+5	1.541E+4	3.62%	19.33%
80		4	7.118E+5	6.788E+5	7.447E+5	7.047E+5	6.940E+5	7.330E+5	1.035E+4	2.91%	32.65%
140		4	2.412E+5	1.995E+5	2.830E+5	2.335E+5	2.190E+5	2.790E+5	1.312E+4	10.87%	77.17%
180		4	1.472E+5	1.228E+5	1.717E+5	1.480E+5	1.320E+5	1.610E+5	7.696E+3	10.45%	86.07%

Selenastrum Growth Test

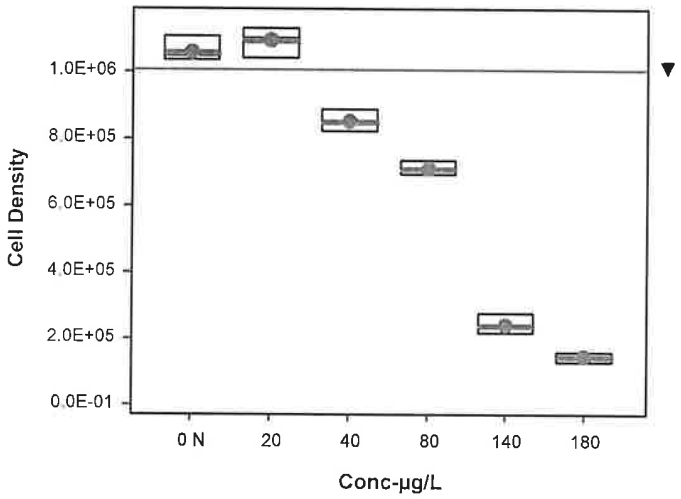
Aquatic Bioassay & Consulting Labs, Inc.

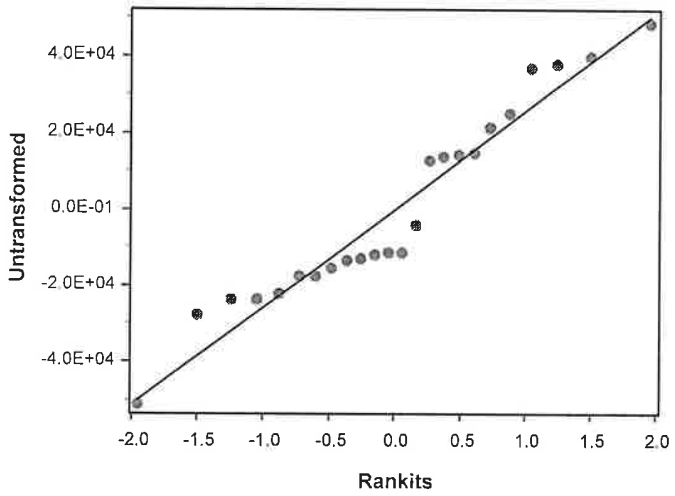
Analysis ID:	02-3719-8182	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	20 Jan-23 16:51	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Edit Date:	20 Jan-23 16:48	**MD5 Hash:**	8002C18F242E2CF77D044A91E3CE4461	**Editor ID:**	009-702-627-3

Cell Density Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.045E+6	1.033E+6	1.044E+6	1.105E+6
20		1.131E+6	1.078E+6	1.116E+6	1.040E+6
40		8.670E+5	8.290E+5	8.250E+5	8.890E+5
80		6.940E+5	7.330E+5	6.940E+5	7.260E+5
140		2.190E+5	2.370E+5	2.300E+5	2.790E+5
180		1.360E+5	1.610E+5	1.600E+5	1.320E+5

Graphics





CETIS Analytical Report

Selenastrum Growth Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	05-1997-3179	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	20 Jan-23 16:51	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	20 Jan-23 16:48	**MD5 Hash:**	8002C18F242E2CF77D044A91E3CE4461	**Editor ID:**	009-702-627-3
Batch ID:	19-4179-0418	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	12 Jan-23 13:24	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	16 Jan-23 13:10	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Test Length:	96h	**Taxon:**	Chlorophyta	**Source:**	Aquatic Biosystems, CO **Age:** 7d
Sample ID:	01-0315-3386	**Code:**	SEL011223	**Project:**	REF TOX
Sample Date:	12 Jan-23 13:24	**Material:**	Cadmium chloride	**Source:**	Reference Toxicant
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	Internal Lab		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.03087	<<	0.2	Yes	Passes Criteria
Control Resp	1.06E+6	1.00E+6	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
IC15	34.55	31.57	37.91
IC20	39.4	35.65	48.58
IC25	53.36	40.71	62.3
IC40	88.59	84.67	92.36
IC50	102.3	99.22	105.6

Cell Density Summary

			Calculated Variate						Isotonic Variate	
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	4	1.057E+6	1.044E+6	1.033E+6	1.105E+6	3.09%	0.00%	1.074E+6	0.00%
20		4	1.091E+6	1.097E+6	1.040E+6	1.131E+6	3.74%	-3.26%	1.074E+6	0.00%
40		4	8.525E+5	8.480E+5	8.250E+5	8.890E+5	3.62%	19.33%	8.525E+5	20.62%
80		4	7.118E+5	7.047E+5	6.940E+5	7.330E+5	2.91%	32.65%	7.118E+5	33.72%
140		4	2.412E+5	2.335E+5	2.190E+5	2.790E+5	10.87%	77.17%	2.412E+5	77.54%
180		4	1.472E+5	1.480E+5	1.320E+5	1.610E+5	10.45%	86.07%	1.472E+5	86.29%

Cell Density Detail

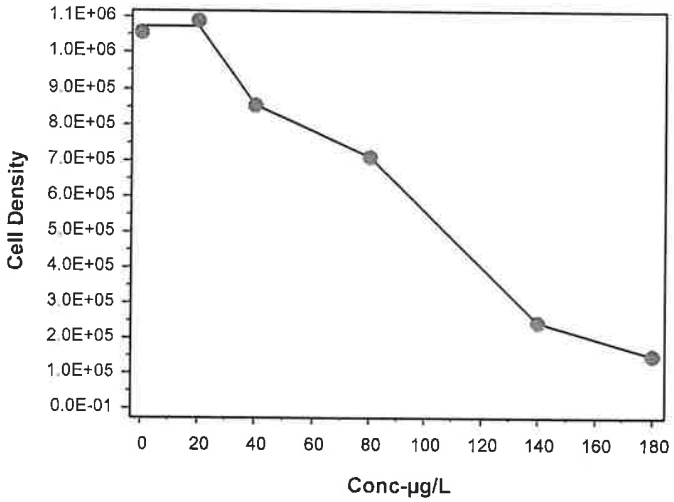
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.045E+6	1.033E+6	1.044E+6	1.105E+6
20		1.131E+6	1.078E+6	1.116E+6	1.040E+6
40		8.670E+5	8.290E+5	8.250E+5	8.890E+5
80		6.940E+5	7.330E+5	6.940E+5	7.260E+5
140		2.190E+5	2.370E+5	2.300E+5	2.790E+5
180		1.360E+5	1.610E+5	1.600E+5	1.320E+5

Selenastrum Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	05-1997-3179	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv2.1.4
Analyzed:	20 Jan-23 16:51	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	20 Jan-23 16:48	**MD5 Hash:**	8002C18F242E2CF77D044A91E3CE4461	**Editor ID:**	009-702-627-3

Graphics



CETIS Measurement Report

Selenastrum Growth Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	19-4179-0418	**Test Type:**	Cell Growth	**Analyst:**		
Start Date:	12 Jan-23 13:24	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water	
Ending Date:	16 Jan-23 13:10	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable	
Test Length:	96h	**Taxon:**	Chlorophyta	**Source:**	Aquatic Biosystems, CO	**Age:** 7d
Sample ID:	01-0315-3386	**Code:**	SEL011223	**Project:**	REF TOX	
Sample Date:	12 Jan-23 13:24	**Material:**	Cadmium chloride	**Source:**	Reference Toxicant	
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX	
Sample Age:	---	**Client:**	Internal Lab			

Alkalinity (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	1	77	---	---	77	77	---	---	---	0
20		1	80	---	---	80	80	---	---	---	0
40		1	77	---	---	77	77	---	---	---	0
80		1	68	---	---	68	68	---	---	---	0
140		1	66	---	---	66	66	---	---	---	0
180		1	65	---	---	65	65	---	---	---	0
Overall		6	72.17	65.29	79.05	65	80	2.676	6.555	9.08%	0 (0%)

Conductivity-µmhos

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	497.6	487.7	507.5	489	510	1.591	7.956	1.60%	0
20		5	489.2	474.1	504.3	468	499	2.439	12.19	2.49%	0
40		5	453.6	434.3	472.9	445	481	3.104	15.52	3.42%	0
80		5	432.4	417.2	447.6	425	454	2.452	12.26	2.84%	0
140		5	407.8	390.9	424.7	400	432	2.722	13.61	3.34%	0
180		5	390.4	369.6	411.2	379	420	3.348	16.74	4.29%	0
Overall		30	445.2	429.5	460.8	379	510	7.646	41.88	9.41%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	1	118	---	---	118	118	---	---	---	0
20		1	110	---	---	110	110	---	---	---	0
40		1	125	---	---	125	125	---	---	---	0
80		1	95	---	---	95	95	---	---	---	0
140		1	98	---	---	98	98	---	---	---	0
180		1	93	---	---	93	93	---	---	---	0
Overall		6	106.5	92.63	120.4	93	125	5.396	13.22	12.41%	0 (0%)

pH-Units

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	7.96	7.849	8.071	7.8	8	0.01789	0.08944	1.12%	0
20		5	8	8	8	8	8	0	0	0.00%	0
40		5	8	8	8	8	8	0	0	0.00%	0
80		5	8	8	8	8	8	0	0	0.00%	0
140		5	7.98	7.924	8.036	7.9	8	0.008943	0.04472	0.56%	0
180		5	7.98	7.924	8.036	7.9	8	0.008943	0.04472	0.56%	0
Overall		30	7.987	7.97	8.003	7.8	8	0.007927	0.04342	0.54%	0 (0%)

Temperature-°C

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
20		5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
40		5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
80		5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
140		5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
180		5	25.28	25.01	25.55	25	25.5	0.04336	0.2168	0.86%	0
Overall		30	25.28	25.21	25.35	25	25.5	0.03601	0.1972	0.78%	0 (0%)

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s).	COC No: 570-203937 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123665-3
Address: 13715 Rider Trail North	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045	PO #:			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	WO #:			
Email:	Project #: 44024446			
Project Name: Boeing SSFL NPDES - Outfall 018 - Comp	SSOW#:			
Site:				

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Evaporation Gross Alpha/Beta	903.0/PreoSep_21 Radium-226	904.0/PreoSep_0 Radium-228	905_Sr90/PreoSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall0018_20230111_Comp (570-123665-1)	1/11/23	08 45 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I II, III, IV Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		1/12/23 1312				
2	Relinquished by	Date/Time:	Company	Received by	Date/Time:	Company
3	Relinquished by	Date/Time:	Company	Received by	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

2/3/2023

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-203964 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123665-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/27/2023			
City: West Sacramento	TAT Requested (days):			
State Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - Comp	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall0018_20230111_Comp (570-123665-1)	1/11/23	08 45 Pacific		Water			X		2	See QAS Boeing_w/u to zero ug/L, Use Boeing glassware
Outfall018_20230111_Comp_Extra (570-123665-2)	1/11/23	08 45 Pacific		Water				X	2	See QAS, Boeing_w/u to zero ug/L, Use Boeing glassware

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II III IV Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/12/23 1419	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

123665

Eurofins Calscience Irvine

570-123665 Chain of Custody

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel. 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Project Manager:** Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	**Field Manager:** Mark Dominick 978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	ANALYSIS REQUIRED: Total Recoverable Metals (E200.7) Zn (E200.8): Cu, Pb, Cd, Se (R)	TCDD (and all congeners) (E1613B) (R)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc)) (R)	Surfactants (MBAS) (SM5540C/E425.1) (R)	Cl- SO_4, Nitrate-N Nitrite-N NO3+NO2-N Perchlorate (E300) (R)	Turbidity TDS (SM2540C/E180.1) (R)	TSS (160.2 (SM2540D)) (R)	Ammonia-N (350.2) (R)	alpha-BHC (E608) (R)	2,4,6 TCP 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625) (R)	Total Recoverable Metals Mercury (E245.1) (C)	Total Recoverable Metals (E200.7) Fe		Comments
Outfall 018	Outfall018_20230111_Comp	1/11/2023 0945	WM	500 mL Poly	1	HNO_3	90	No	X										X	X		Outfall 018 analyze for Fe.
			WM	1 L Glass Amber	2	None	110	No		X												
			WM	1L Poly	1	None	115	No			X											
			WM	500 mL Poly	2	None	120	No				X										
			WM	500 mL Poly	2	None	130	No					X									48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X								48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X						
			WM	1 L Glass Amber	2	None	170	No									X					
			WM	1 L Glass Amber	2	None	180	No										X				
			WM	1L Poly	1	None	185	No							X							
	Outfall018_20230111_Comp_Extra	1/11/2023 0845	WM	1 L Glass Amber	2	None	110	No		H												Hold
			WM	500 mL Poly	2	None	120	No				H										Hold
			WM	500 mL Poly	2	None	130	No					H									Hold
			WM	1 L Glass Amber	2	None	170	No									H					Hold
			WM	1 L Glass Amber	2	None	180	No										H				Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	1/11/23 1400	H&A		1/11/23 1400 EC
	1/11/23 1910 EC			1/11/23 1910

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal. _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: __X__

2.1/2.1 1.2/1.2 1.9/1.9 SCH

Page 24 of 26

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2/3/2023

2019-2020 Rainy Season
Version 4

123665

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R: Total Dissolved Metals: (E200.7) Zn (E200.8) Cu, Pb, Cd, Se	R: Cyanide (SM4500-CN-E / E335.2)	R: Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0) Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R: Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA *	R: Total Dissolved Metals. Mercury (E245.1)	C: Total Dissolved Metals. (E200.7) As, Mn, Fe	Comments
Outfall 018	Outfall018_20230111_Comp_F	1/11/2023 0945	WM	1L Poly	1	None	200	No	X					X	Filter and preserve w/in 24hrs of receipt at lab. Outfall 018 analyze for Fe.
			WM	borosilicate vials	1	None	320	No					X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230111_Comp	1/11/2023 0945 *	WM	500 mL Poly	1	NaOH	220	No		X					
			WM	2.5 Gal Cube	1	None	225	No			X				Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No							
			WM	1 Gal Cube	6	None	235	No				X			Only test if first or second rain events of the year. * Deliver to ABC Labs in Ventura, CA.

Legend A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	1/11/23 1400	H&A		1/11/23 EC
	1/11/23 1910			1/11/23 1910

Turn-around time: (Check)
24 Hour: ____ 72 Hour: ____ 10 Day: __X__
48 Hour: ____ 5 Day: ____ Normal: ____

Sample Integrity: (Check)
Intact: ____ On Ice: ____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: ____ All Level IV: __X__

* Hand-delivered to ABC Labs with copy of COC

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2/3/2023

2019-2020 Rainy Season
Version 4

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123665-4

Login Number: 123665
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/4/2023 3:36:19 PM Revision 1

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 018 - Comp

JOB NUMBER

570-124230-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization

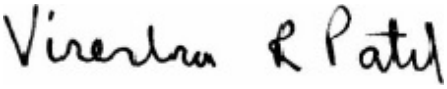

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Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
LH	Surrogate Recoveries were higher than QC limits

HPLC/IC

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Metals

Qualifier	Qualifier Description
BB	Sample > 4X spike concentration
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client: Haley & Aldrich, Inc. Job ID: 570-124230-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Job ID: 570-124230-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124230-1

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 2/14/2023. The report (revision 1) is being revised due to: Revised to remove Nickel from metals list per client..

Receipt
The samples were received on 1/16/2023 5:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.5º C and 1.4º C.

Receipt Exceptions

The reference method requires samples to have a pH of 2. The following samples were received with a pH of 6: <Affected Samples>. The samples were adjusted to the appropriate pH in the laboratory.

Job #: 570-124247 R-1
Job #: 570-124230 R-1,
Job #: 570-124243 AP-1 and AR-1
Job #: 570-124233 K-1
Job #: 570-124239 J-1
Job #: 570-123901 T-1, T-2, U-1, U-2
Job #: 570-123902 J-1, J-2, K-1, K-2

GC/MS Semi VOA
Method 625.1 SIM: Surrogate recovery for the following sample was outside the upper control limit: Outfall018_20230115_Comp (570-124230-1). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 200.8: The method blank for preparation batch 570-297004 and analytical batch 570-297142 contained Iron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: Outfall018_20230115_Comp_F (570-124230-3), (570-124230-C-3 MS) and (570-124230-C-3 MSD). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: Outfall018_20230115_Comp_F (570-124230-3). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Job ID: 570-124230-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 2540D: Sample was very slow to filter. Was unable to filter a large enough sample volume due to time constraints.

Outfall018_20230115_Comp (570-124230-1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-296435. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.
Method 608

Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-296476.The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.
Method:625.1 Sim

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Client Sample ID: Outfall018_20230115_Comp
Lab Sample ID: 570-124230-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.0		2.0	0.72	mg/L	2		300.0	Total/NA
Nitrite as N	0.10	J,DX	0.20	0.086	mg/L	2		300.0	Total/NA
Nitrate as N	0.97		0.20	0.039	mg/L	2		300.0	Total/NA
Sulfate	73		2.0	0.47	mg/L	2		300.0	Total/NA
Nitrate Nitrite as N	1.1		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Copper	1.9	J,DX	2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	0.23	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Zinc	4.6	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Iron	200	MB	20	3.7	ug/L	1		200.8	Total Recoverable
Turbidity	4.5		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Dissolved Solids	220		10	8.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	6.6		3.4	2.9	mg/L	1		SM 2540D	Total/NA
MBAS	0.11	J,DX	0.30	0.054	mg/L	1		SM 5540C	Total/NA

Client Sample ID: Outfall018_20230115_Comp_F
Lab Sample ID: 570-124230-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	1.7	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Zinc	3.4	J,DX BU	20	2.8	ug/L	1		200.8	Dissolved
Iron	17	J,DX BU	20	3.7	ug/L	1		200.8	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: Outfall018_20230115_Comp
Lab Sample ID: 570-124230-1
Date Collected: 01/15/23 09:45
Matrix: Water
Date Received: 01/16/23 17:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		0.94	0.13	ug/L		01/17/23 13:55	01/26/23 16:18	1
2,4-Dinitrotoluene	ND		0.19	0.11	ug/L		01/17/23 13:55	01/26/23 16:18	1
Bis(2-ethylhexyl) phthalate	ND		4.7	3.4	ug/L		01/17/23 13:55	01/26/23 16:18	1
N-Nitrosodimethylamine	ND		0.19	0.17	ug/L		01/17/23 13:55	01/26/23 16:18	1
Pentachlorophenol	ND		0.94	0.80	ug/L		01/17/23 13:55	01/26/23 16:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*91*		*31 - 120*	*01/17/23 13:55*	*01/26/23 16:18*	*1*
Phenol-d6 (Surr)	*38*		*10 - 120*	*01/17/23 13:55*	*01/26/23 16:18*	*1*
p-Terphenyl-d14 (Surr)	*102*		*45 - 120*	*01/17/23 13:55*	*01/26/23 16:18*	*1*
2,4,6-Tribromophenol	*132*	*LH*	*28 - 127*	*01/17/23 13:55*	*01/26/23 16:18*	*1*
2-Fluorophenol	*55*		*17 - 120*	*01/17/23 13:55*	*01/26/23 16:18*	*1*
Nitrobenzene-d5	*109*		*27 - 120*	*01/17/23 13:55*	*01/26/23 16:18*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 608.3 - Organochlorine Pesticides in Water

Client Sample ID: Outfall018_20230115_Comp
Lab Sample ID: 570-124230-1
Date Collected: 01/15/23 09:45
Matrix: Water
Date Received: 01/16/23 17:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		01/17/23 12:18	01/19/23 14:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*60*		*20 - 139*	*01/17/23 12:18*	*01/19/23 14:50*	*1*
DCB Decachlorobiphenyl (Surr)	*44*		*20 - 154*	*01/17/23 12:18*	*01/19/23 14:50*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: Outfall018_20230115_Comp
Lab Sample ID: 570-124230-1
Date Collected: 01/15/23 09:45
Matrix: Water
Date Received: 01/16/23 17:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.0		2.0	0.72	mg/L			01/16/23 22:46	2
Nitrite as N	0.10	J,DX	0.20	0.086	mg/L			01/16/23 22:46	2
Nitrate as N	0.97		0.20	0.039	mg/L			01/16/23 22:46	2
Sulfate	73		2.0	0.47	mg/L			01/16/23 22:46	2

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: Outfall018_20230115_Comp
Lab Sample ID: 570-124230-1
Date Collected: 01/15/23 09:45
Matrix: Water
Date Received: 01/16/23 17:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/19/23 22:25	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: Outfall018_20230115_Comp
Lab Sample ID: 570-124230-1
Date Collected: 01/15/23 09:45
Matrix: Water
Date Received: 01/16/23 17:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	1.1		0.10	0.020	mg/L			01/17/23 15:00	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: Outfall018_20230115_Comp
Lab Sample ID: 570-124230-1
Date Collected: 01/15/23 09:45
Matrix: Water
Date Received: 01/16/23 17:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/19/23 09:12	01/19/23 13:25	1
Copper	**1.9**	**J,DX**	2.0	0.32	ug/L		01/19/23 09:12	01/19/23 13:25	1
Lead	**0.23**	**J,DX**	1.0	0.12	ug/L		01/19/23 09:12	01/19/23 13:25	1
Selenium	ND		2.0	0.52	ug/L		01/19/23 09:12	01/19/23 13:25	1
Zinc	**4.6**	**J,DX**	20	2.8	ug/L		01/19/23 09:12	01/19/23 13:25	1
Iron	**200**	**MB**	20	3.7	ug/L		01/19/23 09:12	01/19/23 13:25	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: Outfall018_20230115_Comp_F
Lab Sample ID: 570-124230-3
Date Collected: 01/15/23 09:45
Matrix: Water
Date Received: 01/16/23 17:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			01/18/23 11:15	1
Copper	**1.7**	**J,DX BU**	2.0	0.32	ug/L			01/18/23 11:15	1
Lead	ND	BU	1.0	0.12	ug/L			01/18/23 11:15	1
Selenium	ND	BU	2.0	0.52	ug/L			01/18/23 11:15	1
Zinc	**3.4**	**J,DX BU**	20	2.8	ug/L			01/18/23 11:15	1
Iron	**17**	**J,DX BU**	20	3.7	ug/L			01/18/23 11:15	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: Outfall018_20230115_Comp
Lab Sample ID: 570-124230-1
Date Collected: 01/15/23 09:45
Matrix: Water
Date Received: 01/16/23 17:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		01/18/23 18:51	01/19/23 17:19	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: Outfall018_20230115_Comp_F
Lab Sample ID: 570-124230-3
Date Collected: 01/15/23 09:45
Matrix: Water
Date Received: 01/16/23 17:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	BU	0.20	0.12	ug/L		01/18/23 19:30	01/19/23 18:42	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

General Chemistry

Client Sample ID: Outfall018_20230115_Comp
Lab Sample ID: 570-124230-1
Date Collected: 01/15/23 09:45
Matrix: Water
Date Received: 01/16/23 17:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	ND		0.075	0.032	mg/L		01/24/23 10:35	01/24/23 13:14	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			01/17/23 16:34	1
Turbidity (SM 2130B)	**4.5**		0.05	0.05	NTU			01/16/23 22:02	1
Total Dissolved Solids (SM 2540C)	**220**		10	8.7	mg/L			01/18/23 14:33	1
Total Suspended Solids (SM 2540D)	**6.6**		3.4	2.9	mg/L			01/19/23 14:49	1
MBAS (SM 5540C)	**0.11**	**J,DX**	0.30	0.054	mg/L		01/16/23 21:15	01/16/23 22:30	1
Biochemical Oxygen Demand (SM5210B)	ND		2.0	1.0	mg/L			01/16/23 17:56	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Job ID: 570-124230-1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	PHL6	TPHd14	TBP	2FP	NBZ
Lab Sample ID	Client Sample ID	(31-120)	(10-120)	(45-120)	(28-127)	(17-120)	(27-120)
570-124230-1	Outfall018_20230115_Comp	91	38	102	132 LH	55	109
LCS 570-296476/2-A	Lab Control Sample	81	44	105	109	63	81
LCSD 570-296476/3-A	Lab Control Sample Dup	80	45	106	106	63	80
MB 570-296476/1-A	Method Blank	55	26	76	69	40	64

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX2	DCB2
Lab Sample ID	Client Sample ID	(20-139)	(20-154)
570-124230-1	Outfall018_20230115_Comp	60	44

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl (Surr)

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX1	DCB2
Lab Sample ID	Client Sample ID	(20-139)	(20-154)
LCS 570-296435/2-A	Lab Control Sample	85	88
LCSD 570-296435/3-A	Lab Control Sample Dup	85	88
MB 570-296435/1-A	Method Blank	90	89

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-296476/1-A
Matrix: Water
Analysis Batch: 299094

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296476

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		01/17/23 13:55	01/27/23 11:45	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		01/17/23 13:55	01/27/23 11:45	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		01/17/23 13:55	01/27/23 11:45	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		01/17/23 13:55	01/27/23 11:45	1
Pentachlorophenol	ND		1.0	0.84	ug/L		01/17/23 13:55	01/27/23 11:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*55*		*31 - 120*	*01/17/23 13:55*	*01/27/23 11:45*	*1*
Phenol-d6 (Surr)	*26*		*10 - 120*	*01/17/23 13:55*	*01/27/23 11:45*	*1*
p-Terphenyl-d14 (Surr)	*76*		*45 - 120*	*01/17/23 13:55*	*01/27/23 11:45*	*1*
2,4,6-Tribromophenol	*69*		*28 - 127*	*01/17/23 13:55*	*01/27/23 11:45*	*1*
2-Fluorophenol	*40*		*17 - 120*	*01/17/23 13:55*	*01/27/23 11:45*	*1*
Nitrobenzene-d5	*64*		*27 - 120*	*01/17/23 13:55*	*01/27/23 11:45*	*1*

Lab Sample ID: LCS 570-296476/2-A
Matrix: Water
Analysis Batch: 298807

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296476

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4,6-Trichlorophenol	20.0	21.6		ug/L		108	52 - 129
2,4-Dinitrotoluene	20.0	24.7		ug/L		124	48 - 127
Bis(2-ethylhexyl) phthalate	20.0	25.9		ug/L		130	29 - 137
N-Nitrosodimethylamine	20.0	12.3		ug/L		61	20 - 120
Pentachlorophenol	20.0	23.5		ug/L		118	38 - 152

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*81*		*31 - 120*
Phenol-d6 (Surr)	*44*		*10 - 120*
p-Terphenyl-d14 (Surr)	*105*		*45 - 120*
2,4,6-Tribromophenol	*109*		*28 - 127*
2-Fluorophenol	*63*		*17 - 120*
Nitrobenzene-d5	*81*		*27 - 120*

Lab Sample ID: LCSD 570-296476/3-A
Matrix: Water
Analysis Batch: 298807

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296476

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4,6-Trichlorophenol	20.0	21.2		ug/L		106	52 - 129	2	35
2,4-Dinitrotoluene	20.0	24.5		ug/L		122	48 - 127	1	25
Bis(2-ethylhexyl) phthalate	20.0	25.2		ug/L		126	29 - 137	3	50
N-Nitrosodimethylamine	20.0	12.4		ug/L		62	20 - 120	1	21
Pentachlorophenol	20.0	23.3		ug/L		116	38 - 152	1	52

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*80*		*31 - 120*
Phenol-d6 (Surr)	*45*		*10 - 120*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-296476/3-A
Matrix: Water
Analysis Batch: 298807

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296476

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
p-Terphenyl-d14 (Surr)	*106*		*45 - 120*
2,4,6-Tribromophenol	*106*		*28 - 127*
2-Fluorophenol	*63*		*17 - 120*
Nitrobenzene-d5	*80*		*27 - 120*

Method: 608.3 - Organochlorine Pesticides in Water

Lab Sample ID: MB 570-296435/1-A
Matrix: Water
Analysis Batch: 296586

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296435

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		01/17/23 12:18	01/18/23 20:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*90*		*20 - 139*	*01/17/23 12:18*	*01/18/23 20:08*	*1*
DCB Decachlorobiphenyl (Surr)	*89*		*20 - 154*	*01/17/23 12:18*	*01/18/23 20:08*	*1*

Lab Sample ID: LCS 570-296435/2-A
Matrix: Water
Analysis Batch: 296586

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296435

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
alpha-BHC			0.0333	0.0278		ug/L		83	37 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*85*		*20 - 139*
DCB Decachlorobiphenyl (Surr)	*88*		*20 - 154*

Lab Sample ID: LCSD 570-296435/3-A
Matrix: Water
Analysis Batch: 296586

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296435

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
alpha-BHC			0.0333	0.0280		ug/L		84	37 - 140	1	36

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*85*		*20 - 139*
DCB Decachlorobiphenyl (Surr)	*88*		*20 - 154*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-295972/5
Matrix: Water
Analysis Batch: 295972

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			01/16/23 07:41	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 570-295972/5
Matrix: Water
Analysis Batch: 295972

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.10	0.020	mg/L			01/16/23 07:41	1

Lab Sample ID: LCS 570-295972/6
Matrix: Water
Analysis Batch: 295972

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrite as N			2.50	2.59		mg/L		104	90 - 110		
Nitrate as N			5.00	5.08		mg/L		102	90 - 110		

Lab Sample ID: LCSD 570-295972/7
Matrix: Water
Analysis Batch: 295972

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N			2.50	2.53		mg/L		101	90 - 110	2	15
Nitrate as N			5.00	5.02		mg/L		100	90 - 110	1	15

Lab Sample ID: 570-123084-I-3 MS
Matrix: Water
Analysis Batch: 295972

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrite as N	0.49	J,DX	2.50	2.90		mg/L		96	80 - 120		
Nitrate as N	0.25	J,DX	5.00	4.91		mg/L		93	80 - 120		

Lab Sample ID: 570-123084-I-3 MSD
Matrix: Water
Analysis Batch: 295972

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	0.49	J,DX	2.50	2.77		mg/L		91	80 - 120	5	20
Nitrate as N	0.25	J,DX	5.00	4.82		mg/L		91	80 - 120	2	20

Lab Sample ID: MB 570-295973/5
Matrix: Water
Analysis Batch: 295973

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			01/16/23 07:41	1
Sulfate	ND		1.0	0.24	mg/L			01/16/23 07:41	1

Lab Sample ID: LCS 570-295973/6
Matrix: Water
Analysis Batch: 295973

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			50.0	50.0		mg/L		100	90 - 110		
Sulfate			50.0	50.3		mg/L		101	90 - 110		

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 570-295973/7
Matrix: Water
Analysis Batch: 295973

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			50.0	49.9		mg/L		100	90 - 110	0	15
Sulfate			50.0	50.0		mg/L		100	90 - 110	0	15

Lab Sample ID: 570-123084-I-3 MS
Matrix: Water
Analysis Batch: 295973

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	6.3		50.0	46.7		mg/L		81	80 - 120		
Sulfate	6.4		50.0	52.5		mg/L		92	80 - 120		

Lab Sample ID: 570-123084-I-3 MSD
Matrix: Water
Analysis Batch: 295973

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	6.3		50.0	46.1		mg/L		80	80 - 120	1	20
Sulfate	6.4		50.0	51.6		mg/L		90	80 - 120	2	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-297005/7
Matrix: Water
Analysis Batch: 297005

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/19/23 14:46	1

Lab Sample ID: LCS 570-297005/8
Matrix: Water
Analysis Batch: 297005

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	23.2		ug/L		93	85 - 115		

Lab Sample ID: LCSD 570-297005/9
Matrix: Water
Analysis Batch: 297005

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	23.0		ug/L		92	85 - 115	1	15

Lab Sample ID: 570-124594-D-2 MS
Matrix: Water
Analysis Batch: 297005

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	ND		50.0	49.7		ug/L		99	80 - 120		

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: 570-124594-D-2 MSD
Matrix: Water
Analysis Batch: 297005

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	ND		50.0	51.2		ug/L		102	80 - 120	3	15

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-297004/1-A
Matrix: Water
Analysis Batch: 297141

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 297004

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/19/23 09:12	01/19/23 13:25	1
Copper	ND		2.0	0.32	ug/L		01/19/23 09:12	01/19/23 13:25	1
Lead	ND		1.0	0.12	ug/L		01/19/23 09:12	01/19/23 13:25	1
Selenium	ND		2.0	0.52	ug/L		01/19/23 09:12	01/19/23 13:25	1
Zinc	ND		20	2.8	ug/L		01/19/23 09:12	01/19/23 13:25	1
Iron	5.09	J,DX	20	3.7	ug/L		01/19/23 09:12	01/19/23 13:25	1

Lab Sample ID: LCS 570-297004/2-A
Matrix: Water
Analysis Batch: 297141

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 297004

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	80.4		ug/L		101	85 - 115
Copper	80.0	80.6		ug/L		101	85 - 115
Lead	80.0	80.0		ug/L		100	85 - 115
Selenium	80.0	82.6		ug/L		103	85 - 115
Zinc	80.0	80.6		ug/L		101	85 - 115
Iron	800	811		ug/L		101	85 - 115

Lab Sample ID: LCSD 570-297004/3-A
Matrix: Water
Analysis Batch: 297141

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 297004

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	79.2		ug/L		99	85 - 115	2	20
Copper	80.0	80.9		ug/L		101	85 - 115	0	20
Lead	80.0	79.6		ug/L		100	85 - 115	1	20
Selenium	80.0	78.4		ug/L		98	85 - 115	5	20
Zinc	80.0	80.6		ug/L		101	85 - 115	0	20
Iron	800	831		ug/L		104	85 - 115	2	20

Lab Sample ID: 570-124222-B-1-C MS
Matrix: Water
Analysis Batch: 297142

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 297004

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND		80.0	78.7		ug/L		98	80 - 120
Copper	13		80.0	86.6		ug/L		93	80 - 120
Lead	0.34	J,DX	80.0	76.2		ug/L		95	80 - 120
Selenium	0.77	J,DX	80.0	78.3		ug/L		97	80 - 120
Zinc	160		80.0	226		ug/L		84	80 - 120

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-124222-B-1-C MS
Matrix: Water
Analysis Batch: 297142

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 297004

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	8.0	J,DX MB	800	769		ug/L		95	80 - 120

Lab Sample ID: 570-124222-B-1-D MSD
Matrix: Water
Analysis Batch: 297142

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 297004

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND		80.0	79.9		ug/L		100	80 - 120	1	20
Copper	13		80.0	88.3		ug/L		95	80 - 120	2	20
Lead	0.34	J,DX	80.0	78.3		ug/L		97	80 - 120	3	20
Selenium	0.77	J,DX	80.0	77.9		ug/L		96	80 - 120	0	20
Zinc	160		80.0	228		ug/L		86	80 - 120	1	20
Iron	8.0	J,DX MB	800	778		ug/L		96	80 - 120	1	20

Lab Sample ID: MB 570-296510/1-A
Matrix: Water
Analysis Batch: 296754

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L			01/18/23 10:06	1
Copper	ND		2.0	0.32	ug/L			01/18/23 10:06	1
Lead	ND		1.0	0.12	ug/L			01/18/23 10:06	1
Selenium	ND		2.0	0.52	ug/L			01/18/23 10:06	1
Zinc	ND		20	2.8	ug/L			01/18/23 10:06	1
Iron	ND		20	3.7	ug/L			01/18/23 10:06	1

Lab Sample ID: LCS 570-296510/2-A
Matrix: Water
Analysis Batch: 296754

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	73.6		ug/L		92	85 - 115
Copper	80.0	75.7		ug/L		95	85 - 115
Lead	80.0	75.5		ug/L		94	85 - 115
Selenium	80.0	72.7		ug/L		91	85 - 115
Zinc	80.0	74.3		ug/L		93	85 - 115
Iron	800	762		ug/L		95	85 - 115

Lab Sample ID: LCSD 570-296510/3-A
Matrix: Water
Analysis Batch: 296754

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	75.7		ug/L		95	85 - 115	3	20
Copper	80.0	76.9		ug/L		96	85 - 115	2	20
Lead	80.0	77.0		ug/L		96	85 - 115	2	20
Selenium	80.0	73.1		ug/L		91	85 - 115	1	20
Zinc	80.0	74.9		ug/L		94	85 - 115	1	20
Iron	800	778		ug/L		97	85 - 115	2	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-123631-C-2-B MS
Matrix: Water
Analysis Batch: 296758

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND		80.0	70.4		ug/L		88	80 - 120
Copper	2.5		80.0	74.9		ug/L		91	80 - 120
Lead	0.20	J,DX	80.0	72.6		ug/L		90	80 - 120
Selenium	ND		80.0	71.5		ug/L		89	80 - 120
Zinc	380		80.0	442	BB	ug/L		81	80 - 120
Iron	40		800	762		ug/L		90	80 - 120

Lab Sample ID: 570-123631-C-2-C MSD
Matrix: Water
Analysis Batch: 296758

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND		80.0	72.1		ug/L		90	80 - 120	2	20
Copper	2.5		80.0	76.0		ug/L		92	80 - 120	1	20
Lead	0.20	J,DX	80.0	74.3		ug/L		93	80 - 120	2	20
Selenium	ND		80.0	72.5		ug/L		91	80 - 120	1	20
Zinc	380		80.0	443	BB	ug/L		83	80 - 120	0	20
Iron	40		800	770		ug/L		91	80 - 120	1	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-296898/1-A
Matrix: Water
Analysis Batch: 297225

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296898

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		01/18/23 18:51	01/19/23 16:49	1

Lab Sample ID: LCS 570-296898/2-A
Matrix: Water
Analysis Batch: 297225

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296898

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	8.50		ug/L		106	85 - 115

Lab Sample ID: LCSD 570-296898/3-A
Matrix: Water
Analysis Batch: 297225

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296898

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	8.00	8.64		ug/L		108	85 - 115	2	10

Lab Sample ID: 570-124050-A-1-E MS
Matrix: Water
Analysis Batch: 297225

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 296898

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		8.00	8.45		ug/L		106	85 - 115

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: 570-124050-A-1-F MSD
Matrix: Water
Analysis Batch: 297225

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 296898

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		8.00	8.44		ug/L		105	85 - 115	0	10

Lab Sample ID: MB 570-296900/1-B
Matrix: Water
Analysis Batch: 297225

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 296901

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		01/18/23 19:30	01/19/23 18:20	1

Lab Sample ID: LCS 570-296900/2-B
Matrix: Water
Analysis Batch: 297225

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 296901

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	8.90		ug/L		111	85 - 115

Lab Sample ID: LCSD 570-296900/3-B
Matrix: Water
Analysis Batch: 297225

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 296901

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	8.00	8.89		ug/L		111	85 - 115	0	10

Lab Sample ID: 570-124243-F-3-E MS
Matrix: Water
Analysis Batch: 297225

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 296901

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		8.00	8.84		ug/L		111	85 - 115

Lab Sample ID: 570-124243-F-3-F MSD
Matrix: Water
Analysis Batch: 297225

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 296901

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		8.00	8.81		ug/L		110	85 - 115	0	10

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-298179/5-A
Matrix: Water
Analysis Batch: 298207

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 298179

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		01/24/23 10:35	01/24/23 13:00	1

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: LCS 570-298179/6-A
Matrix: Water
Analysis Batch: 298207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 298179

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Ammonia			0.500	0.515		mg/L		103	90 - 110		

Lab Sample ID: LCSD 570-298179/7-A
Matrix: Water
Analysis Batch: 298207

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 298179

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia			0.500	0.504		mg/L		101	90 - 110	2	20

Lab Sample ID: 570-123823-G-1-D MS
Matrix: Water
Analysis Batch: 298207

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 298179

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Ammonia	0.033	J,DX	0.500	0.581		mg/L		110	90 - 110		

Lab Sample ID: 570-123823-G-1-E MSD
Matrix: Water
Analysis Batch: 298207

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 298179

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	0.033	J,DX	0.500	0.568		mg/L		107	90 - 110	2	25

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-296559/11
Matrix: Water
Analysis Batch: 296559

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			01/17/23 15:00	1

Lab Sample ID: LCS 570-296559/12
Matrix: Water
Analysis Batch: 296559

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total			250	243		ug/L		97	90 - 110		

Lab Sample ID: LCSD 570-296559/13
Matrix: Water
Analysis Batch: 296559

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total			250	229		ug/L		92	90 - 110	6	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate (Continued)

Lab Sample ID: MRL 570-296559/10
Matrix: Water
Analysis Batch: 296559

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total			5.00	5.17		ug/L		104	50 - 150		

Lab Sample ID: 570-123565-A-1 MS
Matrix: Water
Analysis Batch: 296559

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total	ND		250	209		ug/L		84	70 - 130		

Lab Sample ID: 570-123565-A-1 MSD
Matrix: Water
Analysis Batch: 296559

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	ND		250	211		ug/L		84	70 - 130	1	30

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-296271/1
Matrix: Water
Analysis Batch: 296271

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			1000	1000		NTU		100.5	99.0 - 101.0		

Lab Sample ID: LCSSRM 570-296271/2
Matrix: Water
Analysis Batch: 296271

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			10.0	10		NTU		99.7	99.0 - 101.0		

Lab Sample ID: LCSSRM 570-296271/3
Matrix: Water
Analysis Batch: 296271

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			0.0200	ND		NTU		100.0	0.0 - 200.0		

Lab Sample ID: 570-124243-J-1 DU
Matrix: Water
Analysis Batch: 296271

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Turbidity	100		110		NTU		3	25

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-296829/1
Matrix: Water
Analysis Batch: 296829

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			01/18/23 14:33	1

Lab Sample ID: LCS 570-296829/2
Matrix: Water
Analysis Batch: 296829

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	1060		mg/L		106	84 - 108

Lab Sample ID: LCSD 570-296829/3
Matrix: Water
Analysis Batch: 296829

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1050		mg/L		105	84 - 108	1	10

Lab Sample ID: 570-124511-B-1 DU
Matrix: Water
Analysis Batch: 296829

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	18000		18200		mg/L		1	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-297140/1
Matrix: Water
Analysis Batch: 297140

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/19/23 14:49	1

Lab Sample ID: LCS 570-297140/2
Matrix: Water
Analysis Batch: 297140

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	91.0		mg/L		91	77 - 116

Lab Sample ID: LCSD 570-297140/3
Matrix: Water
Analysis Batch: 297140

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	88.0		mg/L		88	77 - 116	3	10

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: 570-124511-F-2 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 297140

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	43		47.8		mg/L		10	10

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-296465/5-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 296287 — **Prep Batch: 296465**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.30	0.054	mg/L		01/16/23 21:15	01/16/23 22:24	1

Lab Sample ID: LCS 570-296465/6-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 296287 — **Prep Batch: 296465**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
MBAS	1.00	1.02		mg/L		102	85 - 111

Lab Sample ID: LCSD 570-296465/7-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 296287 — **Prep Batch: 296465**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS	1.00	1.02		mg/L		102	85 - 111	1	7

Lab Sample ID: 570-124243-J-1-A MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 296287 — **Prep Batch: 296465**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
MBAS	0.069	J,DX	1.00	1.10		mg/L		103	75 - 125

Lab Sample ID: 570-124243-J-1-B MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 296287 — **Prep Batch: 296465**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS	0.069	J,DX	1.00	1.08		mg/L		101	75 - 125	2	12

Method: SM5210B - BOD, 5 Day

Lab Sample ID: USB 570-297648/2 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 297648

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L			01/16/23 11:59	1

Method: SM5210B - BOD, 5 Day (Continued)

Lab Sample ID: LCS 570-297648/4
Matrix: Water
Analysis Batch: 297648

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Biochemical Oxygen Demand			199	196		mg/L		99	84.6 - 115.4		

Lab Sample ID: 570-124205-I-5 DU
Matrix: Water
Analysis Batch: 297648

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Biochemical Oxygen Demand	ND			ND		mg/L				NC	25

GC/MS Semi VOA

Prep Batch: 296476

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	625	
MB 570-296476/1-A	Method Blank	Total/NA	Water	625	
LCS 570-296476/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-296476/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 298807

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-296476/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	296476
LCSD 570-296476/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	296476

Analysis Batch: 298809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	625.1 SIM	296476

Analysis Batch: 299094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-296476/1-A	Method Blank	Total/NA	Water	625.1 SIM	296476

GC Semi VOA

Prep Batch: 296435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	608	
MB 570-296435/1-A	Method Blank	Total/NA	Water	608	
LCS 570-296435/2-A	Lab Control Sample	Total/NA	Water	608	
LCSD 570-296435/3-A	Lab Control Sample Dup	Total/NA	Water	608	

Analysis Batch: 296586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-296435/1-A	Method Blank	Total/NA	Water	608.3	296435
LCS 570-296435/2-A	Lab Control Sample	Total/NA	Water	608.3	296435
LCSD 570-296435/3-A	Lab Control Sample Dup	Total/NA	Water	608.3	296435

Analysis Batch: 296909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	608.3	296435

HPLC/IC

Analysis Batch: 295972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	300.0	
MB 570-295972/5	Method Blank	Total/NA	Water	300.0	
LCS 570-295972/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-295972/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-123084-I-3 MS	Matrix Spike	Total/NA	Water	300.0	
570-123084-I-3 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 295973

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	300.0	
MB 570-295973/5	Method Blank	Total/NA	Water	300.0	

HPLC/IC (Continued)

Analysis Batch: 295973 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-295973/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-295973/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-123084-I-3 MS	Matrix Spike	Total/NA	Water	300.0	
570-123084-I-3 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 296501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	NO2NO3 Calc	

Analysis Batch: 297005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	314.0	
MB 570-297005/7	Method Blank	Total/NA	Water	314.0	
LCS 570-297005/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-297005/9	Lab Control Sample Dup	Total/NA	Water	314.0	
570-124594-D-2 MS	Matrix Spike	Total/NA	Water	314.0	
570-124594-D-2 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Metals

Filtration Batch: 296510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-3	Outfall018_20230115_Comp_F	Dissolved	Water	Filtration	
MB 570-296510/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-296510/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-296510/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-123631-C-2-B MS	Matrix Spike	Dissolved	Water	Filtration	
570-123631-C-2-C MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Analysis Batch: 296754

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-296510/1-A	Method Blank	Dissolved	Water	200.8	296510
LCS 570-296510/2-A	Lab Control Sample	Dissolved	Water	200.8	296510
LCSD 570-296510/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	296510

Analysis Batch: 296758

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-3	Outfall018_20230115_Comp_F	Dissolved	Water	200.8	296510
570-123631-C-2-B MS	Matrix Spike	Dissolved	Water	200.8	296510
570-123631-C-2-C MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	296510

Prep Batch: 296898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	245.1	
MB 570-296898/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-296898/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-296898/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
570-124050-A-1-E MS	Matrix Spike	Total/NA	Water	245.1	
570-124050-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	

Metals

Filtration Batch: 296900

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-3	Outfall018_20230115_Comp_F	Dissolved	Water	Filtration	
MB 570-296900/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-296900/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-296900/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-124243-F-3-E MS	Matrix Spike	Dissolved	Water	Filtration	
570-124243-F-3-F MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Prep Batch: 296901

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-3	Outfall018_20230115_Comp_F	Dissolved	Water	245.1	296900
MB 570-296900/1-B	Method Blank	Dissolved	Water	245.1	296900
LCS 570-296900/2-B	Lab Control Sample	Dissolved	Water	245.1	296900
LCSD 570-296900/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	296900
570-124243-F-3-E MS	Matrix Spike	Dissolved	Water	245.1	296900
570-124243-F-3-F MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	296900

Prep Batch: 297004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total Recoverable	Water	200.8	
MB 570-297004/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-297004/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-297004/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-124222-B-1-C MS	Matrix Spike	Total Recoverable	Water	200.8	
570-124222-B-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	

Analysis Batch: 297141

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-297004/1-A	Method Blank	Total Recoverable	Water	200.8	297004
LCS 570-297004/2-A	Lab Control Sample	Total Recoverable	Water	200.8	297004
LCSD 570-297004/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	297004

Analysis Batch: 297142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total Recoverable	Water	200.8	297004
570-124222-B-1-C MS	Matrix Spike	Total Recoverable	Water	200.8	297004
570-124222-B-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	297004

Analysis Batch: 297225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	245.1	296898
570-124230-3	Outfall018_20230115_Comp_F	Dissolved	Water	245.1	296901
MB 570-296898/1-A	Method Blank	Total/NA	Water	245.1	296898
MB 570-296900/1-B	Method Blank	Dissolved	Water	245.1	296901
LCS 570-296898/2-A	Lab Control Sample	Total/NA	Water	245.1	296898
LCS 570-296900/2-B	Lab Control Sample	Dissolved	Water	245.1	296901
LCSD 570-296898/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	296898
LCSD 570-296900/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	296901
570-124050-A-1-E MS	Matrix Spike	Total/NA	Water	245.1	296898
570-124050-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	296898
570-124243-F-3-E MS	Matrix Spike	Dissolved	Water	245.1	296901
570-124243-F-3-F MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	296901

General Chemistry

Analysis Batch: 296271

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	SM 2130B	
LCSSRM 570-296271/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-296271/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-296271/3	Lab Control Sample	Total/NA	Water	SM 2130B	
570-124243-J-1 DU	Duplicate	Total/NA	Water	SM 2130B	

Analysis Batch: 296287

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	SM 5540C	296465
MB 570-296465/5-A	Method Blank	Total/NA	Water	SM 5540C	296465
LCS 570-296465/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	296465
LCSD 570-296465/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	296465
570-124243-J-1-A MS	Matrix Spike	Total/NA	Water	SM 5540C	296465
570-124243-J-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5540C	296465

Prep Batch: 296465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	SM 5540C	
MB 570-296465/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-296465/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-296465/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	
570-124243-J-1-A MS	Matrix Spike	Total/NA	Water	SM 5540C	
570-124243-J-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5540C	

Analysis Batch: 296559

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	Kelada 01	
MB 570-296559/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-296559/12	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-296559/13	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-296559/10	Lab Control Sample	Total/NA	Water	Kelada 01	
570-123565-A-1 MS	Matrix Spike	Total/NA	Water	Kelada 01	
570-123565-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	Kelada 01	

Analysis Batch: 296829

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	SM 2540C	
MB 570-296829/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-296829/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-296829/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
570-124511-B-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 297140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	SM 2540D	
MB 570-297140/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-297140/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-297140/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-124511-F-2 DU	Duplicate	Total/NA	Water	SM 2540D	

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

General Chemistry

Analysis Batch: 297648

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	SM5210B	
USB 570-297648/2	Method Blank	Total/NA	Water	SM5210B	
LCS 570-297648/4	Lab Control Sample	Total/NA	Water	SM5210B	
570-124205-I-5 DU	Duplicate	Total/NA	Water	SM5210B	

Prep Batch: 298179

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	Distill/Ammonia	
MB 570-298179/5-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-298179/6-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-298179/7-A	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	
570-123823-G-1-D MS	Matrix Spike	Total/NA	Water	Distill/Ammonia	
570-123823-G-1-E MSD	Matrix Spike Duplicate	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 298207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	350.1	298179
MB 570-298179/5-A	Method Blank	Total/NA	Water	350.1	298179
LCS 570-298179/6-A	Lab Control Sample	Total/NA	Water	350.1	298179
LCSD 570-298179/7-A	Lab Control Sample Dup	Total/NA	Water	350.1	298179
570-123823-G-1-D MS	Matrix Spike	Total/NA	Water	350.1	298179
570-123823-G-1-E MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	298179

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Client Sample ID: Outfall018_20230115_Comp
Lab Sample ID: 570-124230-1
Date Collected: 01/15/23 09:45
Matrix: Water
Date Received: 01/16/23 17:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			1062.3 mL	2 mL	296476	01/17/23 13:55	UM1W	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	298809	01/26/23 16:18	ULLI	EET CAL 4
	Instrument ID: GCMSEEE									
Total/NA	Prep	608			1500 mL	1 mL	296435	01/17/23 12:18	USUL	EET CAL 4
Total/NA	Analysis	608.3		1	1 mL	1 mL	296909	01/19/23 14:50	N5Y3	EET CAL 4
	Instrument ID: GC52A									
Total/NA	Analysis	300.0		2	4 mL	4 mL	295972	01/16/23 22:46	PS	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	300.0		2	4 mL	4 mL	295973	01/16/23 22:46	PS	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	314.0		1	4 mL	4 mL	297005	01/19/23 22:25	PS	EET CAL 4
	Instrument ID: IC13									
Total/NA	Analysis	NO2NO3 Calc		1			296501	01/17/23 15:00	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total Recoverable	Prep	200.8			50 mL	50 mL	297004	01/19/23 09:12	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			297142	01/19/23 13:25	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Prep	245.1			25 mL	50 mL	296898	01/18/23 18:51	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			297225	01/19/23 17:19	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	298179	01/24/23 10:35	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	298207	01/24/23 13:14	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	296559	01/17/23 16:34	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			296271	01/16/23 22:02	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	296829	01/18/23 14:33	ZL7L	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	290 mL	1000 mL	297140	01/19/23 14:49	BDH9	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Prep	SM 5540C			100 mL	100 mL	296465	01/16/23 21:15	TXA8	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	296287	01/16/23 22:30	TXA8	EET CAL 4
	Instrument ID: UV9									
Total/NA	Analysis	SM5210B		1			297648	01/16/23 17:56	U7UR	EET CAL 4
	Instrument ID: BOD3									

Client Sample ID: Outfall018_20230115_Comp_F
Lab Sample ID: 570-124230-3
Date Collected: 01/15/23 09:45
Matrix: Water
Date Received: 01/16/23 17:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	296510	01/17/23 15:47	W1BQ	EET CAL 4
Dissolved	Analysis	200.8		1			296758	01/18/23 11:15	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Client Sample ID: Outfall018_20230115_Comp_F
Lab Sample ID: 570-124230-3

Date Collected: 01/15/23 09:45
Matrix: Water
Date Received: 01/16/23 17:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			25 mL	25 mL	296900	01/18/23 18:53	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	296901	01/18/23 19:30	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			297225	01/19/23 18:42	C0YH	EET CAL 4
	Instrument ID: HG8									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method	Method Description	Protocol	Laboratory
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
608.3	Organochlorine Pesticides in Water	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
SM5210B	BOD, 5 Day	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
608	Liquid-Liquid Extraction (Separatory Funnel)	EPA	EET CAL 4
625	Liquid-Liquid Extraction	EPA	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124230-1	Outfall018_20230115_Comp	Water	01/15/23 09:45	01/16/23 17:00
570-124230-3	Outfall018_20230115_Comp_F	Water	01/15/23 09:45	01/16/23 17:00

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Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Project Manager:** Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	**Field Manager:** Mark Dominick 978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	ANALYSIS REQUIRED: Total Dissolved Metals. (E200.7) Zn (E200.8) Cu, Pb, Cd, Se (R)	Cyanide (SM4500-CN-E / E335.2) (R)	Gross Alpha(E900.0), Gross Beta(E900.0) Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1) (R)	Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA (R)	Total Dissolved Metals. Mercury (E245.1) (R)	Total Dissolved Metals: (E200.7) Fe (C)	Comments
(3) Outfall 018	Outfall018_20230115_Comp_F	1/15/2023 1045	WM	1L Poly	1	None	200	No	X					Filter and preserve w/in 24hrs of receipt at lab. Outfall 018 Fe.
			WM	borosilicate vials	1	None	320	No					X	Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
(1)	Outfall018_20230115_Comp	1/15/2023 1045	WM	500 mL Poly	1	NaOH	220	No		X				
			WM	2.5 Gal Cube	1	None	225	No			X			Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No						
			WM	1 Gal Cube	6	None	230	No				X		Only test if first or second rain events of the year. Deliver to ABC Labs in Ventura, CA.

Chronic toxicity not collected and not submitted. Removed from COC (MD 2/1/2023)

Legend. A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-16-2023/1430	H:A	[signature]	EC 1-16-23 14:30
[signature]	1-16-23 17:00	EC	[signature]	AC EC 1-16-23 17:00

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
Nc Level IV: _____ All Level IV: __X__

4/4/2023 (Rev 1)

2019-2020 Rainy Season
Version 4

124230

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-124230 Chain of Custody

									R	R	R	R	R	R	R	R	R	R	R	C		
Client Name/Address: Haley & Aldrich, 5333 Mission Center Rd Suite 300, San Diego, CA 92108									ANALYSIS REQUIRED													
Eurofins Calscience Irvine Contact: Christian Bondoc, 17461 Derian Ave Suite #100, Irvine CA 92614, Tel 949-260-3218									Total Recoverable Metals (E200.7): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl- SO4, Nitrate-N Nitrite-N NO3+NO2-N Perchlorate (E300)	Turbidity TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)	Total Recoverable Metals. (E200.7) Fe		Comments
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.																						
Sampler: Adrian Mobeka																						
Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001 002, 011 018] Outfall 018 Comp																						
Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)																						
Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)																						
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD														
(1) Outfall 018	Outfall018_20230115_Comp	1/15/2023 0945	WM	500 mL Poly	1	HNO_3	90	No	X										X	X		Outfall 018 Fe.
			WM	1 L Glass Amber	2	None	110	No		X												
			WM	1L Poly	1	None	115	No			X											
			WM	500 mL Poly	2	None	120	No				X										
			WM	500 mL Poly	2	None	130	No					X									48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X								48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X						
			WM	1 L Glass Amber	2	None	170	No									X					
			WM	1 L Glass Amber	2	None	180	No										X				
			WM	1L Poly	1	None	185	No							X							
(2)	Outfall018_20230115_Comp_Extra	1/15/2023 0945	WM	1 L Glass Amber	2	None	110	No		H												Hold
			WM	500 mL Poly	2	None	120	No				H										Hold
			WM	500 mL Poly	2	None	130	No					H									Hold
			WM	1 L Glass Amber	2	None	170	No									H					Hold
			WM	1 L Glass Amber	2	None	180	No										H				Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company	Received By	Date/Time:
	1-16-2023/1430	H:A		(CC) 1-16-23 14:30
	1-16-23 17:00	EC		EC 1-16-23 17:00

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

0.5/0.5 1.4/1.4 soil

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2019-2020 Rainy Season
Version 4

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Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

									R	R	R	R	R	C							
Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108 Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218				Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp					ANALYSIS REQUIRED												
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.				Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)																	
Sampler: Adrian Mobeka				Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)																	
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals. (E200.7) Zn (E200.8): Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0) Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA	Total Dissolved Metals. Mercury (E245.1)	Total Dissolved Metals: (E200.7) Fe							Comments
Outfall 018	Outfall018_20230115_Comp_F	1/15/2023 1045	WM	1L Poly	1	None	200	No	X					X							Filter and preserve w/in 24hrs of receipt at lab. Outfall 018 Fe.
			WM	borosilicate vials	1	None	320	No					X								Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230115_Comp	1/15/2023 1045	WM	500 mL Poly	1	NaOH	220	No		X											
			WM	2.5 Gal Cube	1	None	225	No			X										Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No													
			WM	1 Gal Cube	6	None	235	No				X									Only test if first or second rain events of the year Deliver to ABC Labs in Ventura, CA.

Legend. A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
	1-16-2023/1430	H:A	EC	1-16-23 14:32
	1-16-23 17:00	EC	AG EC	1-16-23 17:00

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal _____

Sample Integrity: (Check)
Intact: _____ On Ice:_____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV:__X__

4/4/2023 (Rev. 1)
2019-2020 Rainy Season
Version 4

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124230-1

Login Number: 124230
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 018 - Comp

JOB NUMBER

570-124230-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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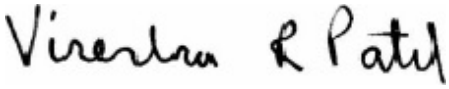
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-124230-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124230-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124230-2

Comments
No additional comments.

Receipt
The samples were received on 1/16/2023 5:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.5º C and 1.4º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: Outfall018_20230115_Comp (570-124230-1), (CCV 320-652285/2) and (MB 320-650862/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Job ID: 570-124230-2

Client Sample ID: Outfall018_20230115_Comp

Lab Sample ID: 570-124230-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.00000086	J,DX MB	0.000048	0.00000026	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.00000090	J,DX MB	0.000048	0.00000019	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.00000079	J,DX MB	0.000048	0.00000023	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000029	J,DX MB	0.000048	0.00000032	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000014	J,DX MB	0.000048	0.00000033	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000013	J,DX MB q	0.000048	0.00000029	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000011	J,DX MB	0.000048	0.00000025	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000098	J,DX MB	0.000048	0.00000023	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000012	J,DX MB	0.000048	0.00000024	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000088	J,DX MB q	0.000048	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000011	J,DX MB	0.000048	0.00000042	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000033	J,DX MB	0.000048	0.00000028	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000015	J,DX MB	0.000048	0.00000032	ug/L	1		1613B	Total/NA
OCDD	0.000095	J,DX MB	0.000095	0.00000097	ug/L	1		1613B	Total/NA
OCDF	0.0000061	J,DX MB	0.000095	0.00000029	ug/L	1		1613B	Total/NA
Total TCDD	0.0000052	J,DX MB q	0.0000095	0.00000031	ug/L	1		1613B	Total/NA
Total TCDF	0.00000051	J,DX MB	0.0000095	0.00000016	ug/L	1		1613B	Total/NA
Total PeCDD	0.00000086	J,DX MB	0.000048	0.00000026	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000017	J,DX MB	0.000048	0.00000019	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000089	J,DX MB q	0.000048	0.00000029	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000053	J,DX MB q	0.000048	0.00000021	ug/L	1		1613B	Total/NA
Total HpCDD	0.000022	J,DX MB	0.000048	0.00000042	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000073	J,DX MB	0.000048	0.00000028	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: Outfall018_20230115_Comp
Date Collected: 01/15/23 09:45
Date Received: 01/16/23 17:00

Lab Sample ID: 570-124230-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000095	0.00000031	ug/L		02/01/23 06:04	02/06/23 16:42	1
1,2,3,7,8-PeCDD	**0.00000086**	**J,DX MB**	0.000048	0.00000026	ug/L		02/01/23 06:04	02/06/23 16:42	1
1,2,3,7,8-PeCDF	**0.00000090**	**J,DX MB**	0.000048	0.00000019	ug/L		02/01/23 06:04	02/06/23 16:42	1
2,3,4,7,8-PeCDF	**0.00000079**	**J,DX MB**	0.000048	0.00000023	ug/L		02/01/23 06:04	02/06/23 16:42	1
1,2,3,4,7,8-HxCDD	**0.0000029**	**J,DX MB**	0.000048	0.00000032	ug/L		02/01/23 06:04	02/06/23 16:42	1
1,2,3,6,7,8-HxCDD	**0.0000014**	**J,DX MB**	0.000048	0.00000033	ug/L		02/01/23 06:04	02/06/23 16:42	1
1,2,3,7,8,9-HxCDD	**0.0000013**	**J,DX MB q**	0.000048	0.00000029	ug/L		02/01/23 06:04	02/06/23 16:42	1
1,2,3,4,7,8-HxCDF	**0.0000011**	**J,DX MB**	0.000048	0.00000025	ug/L		02/01/23 06:04	02/06/23 16:42	1
1,2,3,6,7,8-HxCDF	**0.00000098**	**J,DX MB**	0.000048	0.00000023	ug/L		02/01/23 06:04	02/06/23 16:42	1
1,2,3,7,8,9-HxCDF	**0.0000012**	**J,DX MB**	0.000048	0.00000024	ug/L		02/01/23 06:04	02/06/23 16:42	1
2,3,4,6,7,8-HxCDF	**0.00000088**	**J,DX MB q**	0.000048	0.00000021	ug/L		02/01/23 06:04	02/06/23 16:42	1
1,2,3,4,6,7,8-HpCDD	**0.000011**	**J,DX MB**	0.000048	0.00000042	ug/L		02/01/23 06:04	02/06/23 16:42	1
1,2,3,4,6,7,8-HpCDF	**0.0000033**	**J,DX MB**	0.000048	0.00000028	ug/L		02/01/23 06:04	02/06/23 16:42	1
1,2,3,4,7,8,9-HpCDF	**0.0000015**	**J,DX MB**	0.000048	0.00000032	ug/L		02/01/23 06:04	02/06/23 16:42	1
OCDD	**0.000095**	**J,DX MB**	0.000095	0.00000097	ug/L		02/01/23 06:04	02/06/23 16:42	1
OCDF	**0.0000061**	**J,DX MB**	0.000095	0.00000029	ug/L		02/01/23 06:04	02/06/23 16:42	1
Total TCDD	**0.0000052**	**J,DX MB q**	0.0000095	0.00000031	ug/L		02/01/23 06:04	02/06/23 16:42	1
Total TCDF	**0.00000051**	**J,DX MB**	0.0000095	0.00000016	ug/L		02/01/23 06:04	02/06/23 16:42	1
Total PeCDD	**0.00000086**	**J,DX MB**	0.000048	0.00000026	ug/L		02/01/23 06:04	02/06/23 16:42	1
Total PeCDF	**0.0000017**	**J,DX MB**	0.000048	0.00000019	ug/L		02/01/23 06:04	02/06/23 16:42	1
Total HxCDD	**0.0000089**	**J,DX MB q**	0.000048	0.00000029	ug/L		02/01/23 06:04	02/06/23 16:42	1
Total HxCDF	**0.0000053**	**J,DX MB q**	0.000048	0.00000021	ug/L		02/01/23 06:04	02/06/23 16:42	1
Total HpCDD	**0.000022**	**J,DX MB**	0.000048	0.00000042	ug/L		02/01/23 06:04	02/06/23 16:42	1
Total HpCDF	**0.0000073**	**J,DX MB**	0.000048	0.00000028	ug/L		02/01/23 06:04	02/06/23 16:42	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*61*		*25 - 164*	*02/01/23 06:04*	*02/06/23 16:42*	*1*
13C-2,3,7,8-TCDF	*59*		*24 - 169*	*02/01/23 06:04*	*02/06/23 16:42*	*1*
13C-1,2,3,7,8-PeCDD	*61*		*25 - 181*	*02/01/23 06:04*	*02/06/23 16:42*	*1*
13C-1,2,3,7,8-PeCDF	*62*		*24 - 185*	*02/01/23 06:04*	*02/06/23 16:42*	*1*
13C-2,3,4,7,8-PeCDF	*60*		*21 - 178*	*02/01/23 06:04*	*02/06/23 16:42*	*1*
13C-1,2,3,4,7,8-HxCDD	*60*		*32 - 141*	*02/01/23 06:04*	*02/06/23 16:42*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: Outfall018_20230115_Comp **Lab Sample ID: 570-124230-1**
Date Collected: 01/15/23 09:45 **Matrix: Water**
Date Received: 01/16/23 17:00

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,6,7,8-HxCDD	63		28 - 130	02/01/23 06:04	02/06/23 16:42	1
13C-1,2,3,4,7,8-HxCDF	55		26 - 152	02/01/23 06:04	02/06/23 16:42	1
13C-1,2,3,6,7,8-HxCDF	63		26 - 123	02/01/23 06:04	02/06/23 16:42	1
13C-1,2,3,7,8,9-HxCDF	66		29 - 147	02/01/23 06:04	02/06/23 16:42	1
13C-2,3,4,6,7,8-HxCDF	66		28 - 136	02/01/23 06:04	02/06/23 16:42	1
13C-1,2,3,4,6,7,8-HpCDD	61		23 - 140	02/01/23 06:04	02/06/23 16:42	1
13C-1,2,3,4,6,7,8-HpCDF	57		28 - 143	02/01/23 06:04	02/06/23 16:42	1
13C-1,2,3,4,7,8,9-HpCDF	61		26 - 138	02/01/23 06:04	02/06/23 16:42	1
13C-OCDD	59		17 - 157	02/01/23 06:04	02/06/23 16:42	1
13C-OCDF	59		17 - 157	02/01/23 06:04	02/06/23 16:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	86		35 - 197	02/01/23 06:04	02/06/23 16:42	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: Outfall018_20230115_Comp **Lab Sample ID: 570-124230-1**
Date Collected: 01/15/23 09:45 **Matrix: Water**
Date Received: 01/16/23 17:00

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.0000095	0.00000050	ug/L		02/01/23 06:04	02/07/23 13:49	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*57*		*24 - 169*	*02/01/23 06:04*	*02/07/23 13:49*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*97*		*35 - 197*	*02/01/23 06:04*	*02/07/23 13:49*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Job ID: 570-124230-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**37TCDD (35-197)**
570-124230-1	Outfall018_20230115_Comp	86
570-124230-1 - RA	Outfall018_20230115_Comp	97
MB 320-650862/1-A	Method Blank	82
MB 320-650862/1-A - RA	Method Blank	95

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**37TCDD (31-191)**
LCS 320-650862/2-A	Lab Control Sample	83
LCSD 320-650862/3-A	Lab Control Sample Dup	79

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water
Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(25-164)	(24-169)	(25-181)	(24-185)	(21-178)	(32-141)	(28-130)	(26-152)
570-124230-1	Outfall018_20230115_Comp	61	59	61	62	60	60	63	55
570-124230-1 - RA	Outfall018_20230115_Comp		57						
MB 320-650862/1-A	Method Blank	61	60	63	63	64	62	66	57
MB 320-650862/1-A - RA	Method Blank		59						

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(26-123)	(29-147)	(28-136)	(23-140)	(28-143)	(26-138)	(17-157)	(17-157)
570-124230-1	Outfall018_20230115_Comp	63	66	66	61	57	61	59	59
570-124230-1 - RA	Outfall018_20230115_Comp								
MB 320-650862/1-A	Method Blank	66	66	67	62	59	62	61	60
MB 320-650862/1-A - RA	Method Blank								

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water
Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(20-175)	(22-152)	(21-227)	(21-192)	(13-328)	(21-193)	(25-163)	(19-202)
LCS 320-650862/2-A	Lab Control Sample	60	59	60	61	55	54	57	49
LCSD 320-650862/3-A	Lab Control Sample Dup	62	60	64	65	62	62	64	58

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(21-159)	(17-205)	(22-176)	(26-166)	(21-158)	(20-186)	(13-199)	(13-199)
LCS 320-650862/2-A	Lab Control Sample	57	66	65	62	55	63	62	62
LCSD 320-650862/3-A	Lab Control Sample Dup	65	69	70	65	62	67	65	64

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-650862/1-A
Matrix: Water
Analysis Batch: 652038

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 650862

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.000000844	J,DX q	0.000010	0.00000034	ug/L		02/01/23 06:04	02/06/23 14:23	1
2,3,7,8-TCDF	0.000000804	J,DX q	0.000010	0.00000018	ug/L		02/01/23 06:04	02/06/23 14:23	1
1,2,3,7,8-PeCDD	0.00000133	J,DX	0.000050	0.00000028	ug/L		02/01/23 06:04	02/06/23 14:23	1
1,2,3,7,8-PeCDF	0.00000141	J,DX	0.000050	0.00000026	ug/L		02/01/23 06:04	02/06/23 14:23	1
2,3,4,7,8-PeCDF	0.00000105	J,DX	0.000050	0.00000028	ug/L		02/01/23 06:04	02/06/23 14:23	1
1,2,3,4,7,8-HxCDD	0.00000333	J,DX	0.000050	0.00000027	ug/L		02/01/23 06:04	02/06/23 14:23	1
1,2,3,6,7,8-HxCDD	0.00000177	J,DX	0.000050	0.00000028	ug/L		02/01/23 06:04	02/06/23 14:23	1
1,2,3,7,8,9-HxCDD	0.00000192	J,DX	0.000050	0.00000024	ug/L		02/01/23 06:04	02/06/23 14:23	1
1,2,3,4,7,8-HxCDF	0.00000144	J,DX	0.000050	0.00000025	ug/L		02/01/23 06:04	02/06/23 14:23	1
1,2,3,6,7,8-HxCDF	0.00000140	J,DX	0.000050	0.00000022	ug/L		02/01/23 06:04	02/06/23 14:23	1
1,2,3,7,8,9-HxCDF	0.00000126	J,DX q	0.000050	0.00000024	ug/L		02/01/23 06:04	02/06/23 14:23	1
2,3,4,6,7,8-HxCDF	0.000000852	J,DX q	0.000050	0.00000021	ug/L		02/01/23 06:04	02/06/23 14:23	1
1,2,3,4,6,7,8-HpCDD	0.00000347	J,DX q	0.000050	0.00000019	ug/L		02/01/23 06:04	02/06/23 14:23	1
1,2,3,4,6,7,8-HpCDF	0.00000196	J,DX q	0.000050	0.00000023	ug/L		02/01/23 06:04	02/06/23 14:23	1
1,2,3,4,7,8,9-HpCDF	0.00000202	J,DX	0.000050	0.00000026	ug/L		02/01/23 06:04	02/06/23 14:23	1
OCDD	0.0000106	J,DX	0.00010	0.00000036	ug/L		02/01/23 06:04	02/06/23 14:23	1
OCDF	0.00000474	J,DX	0.00010	0.00000024	ug/L		02/01/23 06:04	02/06/23 14:23	1
Total TCDD	0.00000670	J,DX q	0.000010	0.00000034	ug/L		02/01/23 06:04	02/06/23 14:23	1
Total TCDF	0.000000804	J,DX q	0.000010	0.00000018	ug/L		02/01/23 06:04	02/06/23 14:23	1
Total PeCDD	0.00000176	J,DX q	0.000050	0.00000028	ug/L		02/01/23 06:04	02/06/23 14:23	1
Total PeCDF	0.00000246	J,DX	0.000050	0.00000026	ug/L		02/01/23 06:04	02/06/23 14:23	1
Total HxCDD	0.00000809	J,DX q	0.000050	0.00000024	ug/L		02/01/23 06:04	02/06/23 14:23	1
Total HxCDF	0.00000495	J,DX q	0.000050	0.00000021	ug/L		02/01/23 06:04	02/06/23 14:23	1
Total HpCDD	0.00000606	J,DX q	0.000050	0.00000019	ug/L		02/01/23 06:04	02/06/23 14:23	1
Total HpCDF	0.00000398	J,DX q	0.000050	0.00000023	ug/L		02/01/23 06:04	02/06/23 14:23	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*61*		*25 - 164*	*02/01/23 06:04*	*02/06/23 14:23*	*1*
13C-2,3,7,8-TCDF	*60*		*24 - 169*	*02/01/23 06:04*	*02/06/23 14:23*	*1*
13C-1,2,3,7,8-PeCDD	*63*		*25 - 181*	*02/01/23 06:04*	*02/06/23 14:23*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-650862/1-A
Matrix: Water
Analysis Batch: 652038

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 650862

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDF	63		24 - 185	02/01/23 06:04	02/06/23 14:23	1
13C-2,3,4,7,8-PeCDF	64		21 - 178	02/01/23 06:04	02/06/23 14:23	1
13C-1,2,3,4,7,8-HxCDD	62		32 - 141	02/01/23 06:04	02/06/23 14:23	1
13C-1,2,3,6,7,8-HxCDD	66		28 - 130	02/01/23 06:04	02/06/23 14:23	1
13C-1,2,3,4,7,8-HxCDF	57		26 - 152	02/01/23 06:04	02/06/23 14:23	1
13C-1,2,3,6,7,8-HxCDF	66		26 - 123	02/01/23 06:04	02/06/23 14:23	1
13C-1,2,3,7,8,9-HxCDF	66		29 - 147	02/01/23 06:04	02/06/23 14:23	1
13C-2,3,4,6,7,8-HxCDF	67		28 - 136	02/01/23 06:04	02/06/23 14:23	1
13C-1,2,3,4,6,7,8-HpCDD	62		23 - 140	02/01/23 06:04	02/06/23 14:23	1
13C-1,2,3,4,6,7,8-HpCDF	59		28 - 143	02/01/23 06:04	02/06/23 14:23	1
13C-1,2,3,4,7,8,9-HpCDF	62		26 - 138	02/01/23 06:04	02/06/23 14:23	1
13C-OCDD	61		17 - 157	02/01/23 06:04	02/06/23 14:23	1
13C-OCDF	60		17 - 157	02/01/23 06:04	02/06/23 14:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	82		35 - 197	02/01/23 06:04	02/06/23 14:23	1

Lab Sample ID: LCS 320-650862/2-A
Matrix: Water
Analysis Batch: 652038

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 650862

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000218		ug/L		109	67 - 158
2,3,7,8-TCDF	0.000200	0.000228		ug/L		114	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.00103		ug/L		103	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.00104		ug/L		104	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.00104		ug/L		104	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.00102		ug/L		102	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.00105		ug/L		105	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.00116		ug/L		116	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.00104		ug/L		104	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.00105		ug/L		105	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.00103		ug/L		103	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.00104		ug/L		104	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.00104		ug/L		104	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.00105		ug/L		105	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.00104		ug/L		104	78 - 138
OCDD	0.00200	0.00205		ug/L		103	78 - 144
OCDF	0.00200	0.00216		ug/L		108	63 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	60		20 - 175
13C-2,3,7,8-TCDF	59		22 - 152
13C-1,2,3,7,8-PeCDD	60		21 - 227
13C-1,2,3,7,8-PeCDF	61		21 - 192
13C-2,3,4,7,8-PeCDF	55		13 - 328
13C-1,2,3,4,7,8-HxCDD	54		21 - 193
13C-1,2,3,6,7,8-HxCDD	57		25 - 163

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-650862/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 652038 **Prep Batch: 650862**

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCDF	49		19 - 202
13C-1,2,3,6,7,8-HxCDF	57		21 - 159
13C-1,2,3,7,8,9-HxCDF	66		17 - 205
13C-2,3,4,6,7,8-HxCDF	65		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	62		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	55		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	63		20 - 186
13C-OCDD	62		13 - 199
13C-OCDF	62		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	83		31 - 191

Lab Sample ID: LCSD 320-650862/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 652038 **Prep Batch: 650862**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000213		ug/L		106	67 - 158	2	50
2,3,7,8-TCDF			0.000200	0.000223		ug/L		112	75 - 158	2	50
1,2,3,7,8-PeCDD			0.00100	0.00102		ug/L		102	70 - 142	1	50
1,2,3,7,8-PeCDF			0.00100	0.00102		ug/L		102	80 - 134	2	50
2,3,4,7,8-PeCDF			0.00100	0.00104		ug/L		104	68 - 160	0	50
1,2,3,4,7,8-HxCDD			0.00100	0.000996		ug/L		100	70 - 164	2	50
1,2,3,6,7,8-HxCDD			0.00100	0.00105		ug/L		105	76 - 134	0	50
1,2,3,7,8,9-HxCDD			0.00100	0.00105		ug/L		105	64 - 162	9	50
1,2,3,4,7,8-HxCDF			0.00100	0.00101		ug/L		101	72 - 134	3	50
1,2,3,6,7,8-HxCDF			0.00100	0.00104		ug/L		104	84 - 130	1	50
1,2,3,7,8,9-HxCDF			0.00100	0.00102		ug/L		102	78 - 130	2	50
2,3,4,6,7,8-HxCDF			0.00100	0.00102		ug/L		102	70 - 156	2	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.00103		ug/L		103	70 - 140	0	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00104		ug/L		104	82 - 122	1	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.00103		ug/L		103	78 - 138	1	50
OCDD			0.00200	0.00205		ug/L		102	78 - 144	0	50
OCDF			0.00200	0.00213		ug/L		106	63 - 170	1	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	62		20 - 175
13C-2,3,7,8-TCDF	60		22 - 152
13C-1,2,3,7,8-PeCDD	64		21 - 227
13C-1,2,3,7,8-PeCDF	65		21 - 192
13C-2,3,4,7,8-PeCDF	62		13 - 328
13C-1,2,3,4,7,8-HxCDD	62		21 - 193
13C-1,2,3,6,7,8-HxCDD	64		25 - 163
13C-1,2,3,4,7,8-HxCDF	58		19 - 202
13C-1,2,3,6,7,8-HxCDF	65		21 - 159
13C-1,2,3,7,8,9-HxCDF	69		17 - 205
13C-2,3,4,6,7,8-HxCDF	70		22 - 176

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-650862/3-A
Matrix: Water
Analysis Batch: 652038

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 650862

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDD	65		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	62		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	67		20 - 186
13C-OCDD	65		13 - 199
13C-OCDF	64		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	79		31 - 191

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Lab Sample ID: MB 320-650862/1-A
Matrix: Water
Analysis Batch: 652285

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 650862

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF - RA	ND		0.000010	0.00000058	ug/L		02/01/23 06:04	02/07/23 13:23	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF - RA	59		24 - 169	02/01/23 06:04	02/07/23 13:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD - RA	95		35 - 197	02/01/23 06:04	02/07/23 13:23	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Specialty Organics

Prep Batch: 650862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1 - RA	Outfall018_20230115_Comp	Total/NA	Water	1613B	
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	1613B	
MB 320-650862/1-A - RA	Method Blank	Total/NA	Water	1613B	
MB 320-650862/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-650862/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-650862/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 652038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	1613B	650862
MB 320-650862/1-A	Method Blank	Total/NA	Water	1613B	650862
LCS 320-650862/2-A	Lab Control Sample	Total/NA	Water	1613B	650862
LCSD 320-650862/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	650862

Analysis Batch: 652285

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1 - RA	Outfall018_20230115_Comp	Total/NA	Water	1613B	650862
MB 320-650862/1-A - RA	Method Blank	Total/NA	Water	1613B	650862

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Client Sample ID: Outfall018_20230115_Comp
Lab Sample ID: 570-124230-1

Date Collected: 01/15/23 09:45
Matrix: Water
Date Received: 01/16/23 17:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		1047.3 mL	20 uL	650862	02/01/23 06:04	FC	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	652285	02/07/23 13:49	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			1047.3 mL	20 uL	650862	02/01/23 06:04	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	652038	02/06/23 16:42	GRB	EET SAC
	Instrument ID: 12D5									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 570-124230-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23 *
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Job ID: 570-124230-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124230-1	Outfall018_20230115_Comp	Water	01/15/23 09:45	01/16/23 17:00

124230

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-124230 Chain of Custody

									R	R	R	R	R	R	R	R	R	R	R	C	
Client Name/Address: Haley & Aldrich, 5333 Mission Center Rd Suite 300, San Diego, CA 92108									ANALYSIS REQUIRED												
Eurofins Calscience Irvine Contact: Christian Bondoc, 17461 Derian Ave Suite #100, Irvine CA 92614, Tel 949-260-3218									Total Recoverable Metals (E200.7): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl- SO4, Nitrate-N Nitrite-N NO3+NO2-N Perchlorate (E300)	Turbidity TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)	Total Recoverable Metals. (E200.7) Fe		Comments
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.																					
Sampler: Adrian Mobeka																					
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD													
Outfall 018 (1)	Outfall018_20230115_Comp	1/15/2023 0945	WM	500 mL Poly	1	HNO_3	90	No	X										X	X		Outfall 018 Fe.
			WM	1 L Glass Amber	2	None	110	No		X												
			WM	1L Poly	1	None	115	No			X											
			WM	500 mL Poly	2	None	120	No				X										
			WM	500 mL Poly	2	None	130	No					X									48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X								48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X						
			WM	1 L Glass Amber	2	None	170	No									X					
			WM	1 L Glass Amber	2	None	180	No										X				
			WM	1L Poly	1	None	185	No							X							
(2)	Outfall018_20230115_Comp_Extra	1/15/2023 0945	WM	1 L Glass Amber	2	None	110	No		H												Hold
			WM	500 mL Poly	2	None	120	No				H										Hold
			WM	500 mL Poly	2	None	130	No					H									Hold
			WM	1 L Glass Amber	2	None	170	No										H				Hold
			WM	1 L Glass Amber	2	None	180	No											H			Hold

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Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company	Received By	Date/Time:
	1-16-2023/1430	H:A	EC	1-16-23 14:30
EC	1-16-23 17:00	EC		
			EC	1-16-23 17:00

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

0.5/0.5 1.4/1.4 soil

2/14/2023

2019-2020 Rainy Season
Version 4

124230

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Project Manager:** Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	**Field Manager:** Mark Dominick 978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	ANALYSIS REQUIRED: Total Dissolved Metals. (E200.7) Zn (E200.8): Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0) Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA	Total Dissolved Metals. Mercury (E245.1)	Total Dissolved Metals: (E200.7) Fe						Comments
					R	R	R	R	R	C								
(1) Outfall 018	Outfall018_20230115_Comp_F	1/15/2023 0945	WM	1L Poly	1	None	200	No	X					X						Filter and preserve w/in 24hrs of receipt at lab. Outfall 018 Fe.
			WM	borosilicate vials	1	None	320	No					X							Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230115_Comp	1/15/2023 0945	WM	500 mL Poly	1	NaOH	220	No		X										
			WM	2.5 Gal Cube	1	None	225	No			X									Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No												
			WM	1 Gal Cube	6	None	235	No				X								Only test if first or second rain events of the year Deliver to ABC Labs in Ventura, CA.

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Legend. A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-16-2023/1430	H:A	[signature] EC	1-16-23 14:32
[signature]	1-16-23 17:00	EC	[signature] EC	1-16-23 17:00

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal _____

Sample Integrity: (Check)
Intact: _____ On Ice:_____
Store samples for 6 months.

Data Requirements. (Check)
No Level IV: _____ All Level IV:__X__

2/14/2023

2019-2020 Rainy Season
Version 4

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124230-2

Login Number: 124230
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124230-2

Login Number: 124230
List Number: 3
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 01/18/23 12:00 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.3c 3.2c 1.9c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/20/2023 2:39:37 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 018 - Comp

JOB NUMBER

570-124230-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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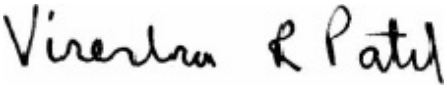
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-124230-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124230-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124230-3

Comments
No additional comments.

Receipt
The samples were received on 1/16/2023 5:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.5º C and 1.4º C.

Receipt Exceptions

The reference method requires samples to have a pH of 2. The following samples were received with a pH of 6: <Affected Samples>. The samples were adjusted to the appropriate pH in the laboratory.

Job #: 570-124247 R-1
Job #: 570-124230 R-1,
Job #: 570-124243 AP-1 and AR-1
Job #: 570-124233 K-1
Job #: 570-124239 J-1
Job #: 570-123901 T-1, T-2, U-1, U-2
Job #: 570-123902 J-1, J-2, K-1, K-2

RAD
Method 900.0: Gross Alpha and Gross Beta batch 598534
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Outfall018_20230115_Comp (570-124230-1), (LCS 160-598534/2-A), (LCSB 160-598534/3-A), (MB 160-598534/1-A), (570-124230-R-1-J DU), (570-124230-R-1-H MS) and (570-124230-R-1-I MSBT)

Method 901.1: Gamma Prep Batch 160-597551
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211

Job ID: 570-124230-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

Th-227 Pb-211
Bi-214 Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Outfall018_20230115_Comp (570-124230-1) and (570-124230-R-1-F DU)

Method 903.0: Radium-226 prep batch 160-597480:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall018_20230115_Comp (570-124230-1), (LCS 160-597480/2-A), (LCSD 160-597480/3-A) and (MB 160-597480/1-A)

Method 904.0: Radium-228 batch 597487
The LCS/LCSD recovered at (LCS 142% / LCSD 135%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCS 160-597487/2-A) and (LCSD 160-597487/3-A)

Method 904.0: Radium-228 batch 597487
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230115_Comp (570-124230-1), (LCS 160-597487/2-A), (LCSD 160-597487/3-A) and (MB 160-597487/1-A)

Method 905: Strontium-90 prep batch 160-597465:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall018_20230115_Comp (570-124230-1), (LCS 160-597465/2-A), (LCSD 160-597465/3-A) and (MB 160-597465/1-A)

Method 906.0: Tritium 597488
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall018_20230115_Comp (570-124230-1), (LCS 160-597488/2-A), (MB 160-597488/1-A), (570-123038-U-2-B), (570-123038-U-2-C DU), (570-123414-Q-1-B) and (570-123414-Q-1-C MS)

Methods A-01-R, U-02-RC: Isotopic Uranium batch 597538
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230115_Comp (570-124230-1), (LCS 160-597538/2-A), (MB 160-597538/1-A), (570-123671-T-2-E) and (570-123671-T-2-F DU)

Method PrecSep_0: Radium-228 Prep Batch 160-597487

The following sample was prepared at a reduced aliquot due to Matrix: Outfall018_20230115_Comp (570-124230-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch

Job ID: 570-124230-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

precision.

Method PrecSep-21: Radium-226 Prep Batch 160-597480

The following sample was prepared at a reduced aliquot due to Matrix: Outfall018_20230115_Comp (570-124230-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 160-597465

The following sample was prepared at a reduced aliquot due to Matrix: Outfall018_20230115_Comp (570-124230-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Client Sample ID: Outfall018_20230115_Comp
Lab Sample ID: 570-124230-1

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: Outfall018_20230115_Comp
Date Collected: 01/15/23 09:45
Date Received: 01/16/23 17:00

Lab Sample ID: 570-124230-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	2.61		1.71	1.74	3.00	2.56	pCi/L	01/27/23 10:37	02/13/23 18:38	1
Gross Beta	3.65		0.859	0.934	4.00	0.985	pCi/L	01/27/23 10:37	02/13/23 18:38	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: Outfall018_20230115_Comp
Date Collected: 01/15/23 09:45
Date Received: 01/16/23 17:00

Lab Sample ID: 570-124230-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.49	U	6.71	6.71	20.0	8.23	pCi/L	01/19/23 15:59	02/16/23 01:52	1
Potassium-40	-15.0	U	77.7	77.7		116	pCi/L	01/19/23 15:59	02/16/23 01:52	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: Outfall018_20230115_Comp
Date Collected: 01/15/23 09:45
Date Received: 01/16/23 17:00

Lab Sample ID: 570-124230-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0414	U	0.0823	0.0824	1.00	0.147	pCi/L	01/19/23 11:31	02/10/23 07:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.9*		*40 - 110*	*01/19/23 11:31*	*02/10/23 07:37*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: Outfall018_20230115_Comp
Date Collected: 01/15/23 09:45
Date Received: 01/16/23 17:00

Lab Sample ID: 570-124230-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0946	U	0.458	0.458	1.00	0.828	pCi/L	01/19/23 12:00	01/25/23 12:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.9*		*40 - 110*	*01/19/23 12:00*	*01/25/23 12:06*	*1*
Y Carrier	*81.5*		*40 - 110*	*01/19/23 12:00*	*01/25/23 12:06*	*1*

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: Outfall018_20230115_Comp **Lab Sample ID: 570-124230-1**
Date Collected: 01/15/23 09:45 **Matrix: Water**
Date Received: 01/16/23 17:00

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.0237	U	0.374	0.374	3.00	0.670	pCi/L	01/19/23 09:10	01/27/23 18:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*85.1*		*40 - 110*	*01/19/23 09:10*	*01/27/23 18:27*	*1*
Y Carrier	*83.0*		*40 - 110*	*01/19/23 09:10*	*01/27/23 18:27*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: Outfall018_20230115_Comp
Lab Sample ID: 570-124230-1
Date Collected: 01/15/23 09:45
Matrix: Water
Date Received: 01/16/23 17:00

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-36.0	U	174	174	500	333	pCi/L	01/19/23 12:02	01/21/23 01:48	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: Outfall018_20230115_Comp
Date Collected: 01/15/23 09:45
Date Received: 01/16/23 17:00

Lab Sample ID: 570-124230-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	**0.260**		0.168	0.168	1.00	0.146	pCi/L	01/19/23 14:12	01/30/23 21:43	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*76.9*		*30 - 110*	*01/19/23 14:12*	*01/30/23 21:43*	*1*

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Job ID: 570-124230-3

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
570-124230-1	Outfall018_20230115_Comp	80.9
LCS 160-597480/2-A	Lab Control Sample	84.6
LCSD 160-597480/3-A	Lab Control Sample Dup	85.1
MB 160-597480/1-A	Method Blank	86.9

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-124230-1	Outfall018_20230115_Comp	80.9	81.5
LCS 160-597487/2-A	Lab Control Sample	84.6	86.4
LCSD 160-597487/3-A	Lab Control Sample Dup	85.1	84.9
MB 160-597487/1-A	Method Blank	86.9	91.2

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-124230-1	Outfall018_20230115_Comp	85.1	83.0
LCS 160-597465/2-A	Lab Control Sample	88.8	74.0
LCSD 160-597465/3-A	Lab Control Sample Dup	89.3	69.5
MB 160-597465/1-A	Method Blank	85.4	84.9

Tracer/Carrier Legend

Sr = Sr Carrier

Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-123671-T-2-F DU	Duplicate	92.9
570-124230-1	Outfall018_20230115_Comp	76.9
LCS 160-597538/2-A	Lab Control Sample	80.5
MB 160-597538/1-A	Method Blank	80.4

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-598534/1-A
Matrix: Water
Analysis Batch: 600145

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598534

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.2749	U	0.539	0.540	3.00	1.11	pCi/L	01/27/23 10:37	02/13/23 16:16	1
Gross Beta	0.3954	U	0.533	0.534	4.00	0.888	pCi/L	01/27/23 10:37	02/13/23 16:16	1

Lab Sample ID: LCS 160-598534/2-A
Matrix: Water
Analysis Batch: 600145

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	47.97		7.10	3.00	2.38	pCi/L	95	75 - 125

Lab Sample ID: LCSB 160-598534/3-A
Matrix: Water
Analysis Batch: 600145

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.7	67.26		7.25	4.00	0.956	pCi/L	91	75 - 125

Lab Sample ID: 570-124230-1 MS
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Outfall018_20230115_Comp
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	2.61		50.5	33.45		5.21	3.00	1.74	pCi/L	61	60 - 140

Lab Sample ID: 570-124230-1 MSBT
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Outfall018_20230115_Comp
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	3.65		73.7	75.89		8.13	4.00	0.892	pCi/L	98	60 - 140

Lab Sample ID: 570-124230-1 DU
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Outfall018_20230115_Comp
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	2.61		1.519	U	1.20	3.00	1.80	pCi/L	0.37	1
Gross Beta	3.65		2.505		0.804	4.00	0.976	pCi/L	0.66	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-597551/1-A
Matrix: Water
Analysis Batch: 600521

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597551

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-4.559	U	10.2	10.2	20.0	12.1	pCi/L	01/19/23 15:59	02/15/23 20:28	1
Potassium-40	-34.61	U	91.2	91.3		128	pCi/L	01/19/23 15:59	02/15/23 20:28	1

Lab Sample ID: LCS 160-597551/2-A
Matrix: Water
Analysis Batch: 600544

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597551

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	137500		16400		299	pCi/L	102	75 - 125
Cesium-137	40900	42210		5030	20.0	78.5	pCi/L	103	75 - 125
Cobalt-60	18100	18870		2250		40.6	pCi/L	104	75 - 125

Lab Sample ID: 570-124230-1 DU
Matrix: Water
Analysis Batch: 600538

Client Sample ID: Outfall018_20230115_Comp
Prep Type: Total/NA
Prep Batch: 597551

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	2.49	U	4.234	U	7.98	20.0	9.73	pCi/L	0.12	1
Potassium-40	-15.0	U	44.22	U	79.5		91.6	pCi/L	0.38	1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-597480/1-A
Matrix: Water
Analysis Batch: 600015

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597480

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.06048	U	0.0554	0.0557	1.00	0.0831	pCi/L	01/19/23 11:31	02/10/23 07:35	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.9*		*40 - 110*	*01/19/23 11:31*	*02/10/23 07:35*	*1*

Lab Sample ID: LCS 160-597480/2-A
Matrix: Water
Analysis Batch: 600015

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597480

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	11.76		1.20	1.00	0.0976	pCi/L	104	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*84.6*		*40 - 110*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-597480/3-A
Matrix: Water
Analysis Batch: 600015

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597480

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	11.34		1.16	1.00	0.0982	pCi/L	100	75 - 125	0.18	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*85.1*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-597487/1-A
Matrix: Water
Analysis Batch: 598170

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597487

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.2403	U	0.449	0.450	1.00	0.921	pCi/L	01/19/23 12:00	01/25/23 17:30	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.9*		*40 - 110*	*01/19/23 12:00*	*01/25/23 17:30*	*1*
Y Carrier	*91.2*		*40 - 110*	*01/19/23 12:00*	*01/25/23 17:30*	*1*

Lab Sample ID: LCS 160-597487/2-A
Matrix: Water
Analysis Batch: 598170

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597487

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.25	11.73		1.52	1.00	0.521	pCi/L	142	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*84.6*		*40 - 110*
Y Carrier	*86.4*		*40 - 110*

Lab Sample ID: LCSD 160-597487/3-A
Matrix: Water
Analysis Batch: 598170

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597487

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.25	11.12		1.47	1.00	0.576	pCi/L	135	75 - 125	0.20	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*85.1*		*40 - 110*
Y Carrier	*84.9*		*40 - 110*

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-597465/1-A
Matrix: Water
Analysis Batch: 598536

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597465

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.007801	U	0.199	0.199	3.00	0.356	pCi/L	01/19/23 09:10	01/27/23 18:27	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*85.4*		*40 - 110*	*01/19/23 09:10*	*01/27/23 18:27*	*1*
Y Carrier	*84.9*		*40 - 110*	*01/19/23 09:10*	*01/27/23 18:27*	*1*

Lab Sample ID: LCS 160-597465/2-A
Matrix: Water
Analysis Batch: 598536

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597465

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.38	7.362		0.845	3.00	0.369	pCi/L	100	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*88.8*		*40 - 110*
Y Carrier	*74.0*		*40 - 110*

Lab Sample ID: LCSD 160-597465/3-A
Matrix: Water
Analysis Batch: 598536

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597465

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.38	8.158		0.921	3.00	0.366	pCi/L	111	75 - 125	0.45	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*89.3*		*40 - 110*
Y Carrier	*69.5*		*40 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-597488/1-A
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597488

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-84.68	U	164	165	500	326	pCi/L	01/19/23 12:02	01/20/23 20:22	1

Lab Sample ID: LCS 160-597488/2-A
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597488

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2120	1848		381	500	324	pCi/L	87	75 - 125		

Method: 906.0 - Tritium, Total (LSC) (Continued)

Lab Sample ID: 570-123414-Q-1-C MS
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 597488

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium	-26.1	U	2120	1947		376	500	297	pCi/L	92	60 - 140		

Lab Sample ID: 570-123038-U-2-C DU
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597488

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Tritium	-83.3	U		-97.75	U	162	500	324	pCi/L			0.05	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-597538/1-A
Matrix: Water
Analysis Batch: 598766

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597538

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.08454	U	0.1204	0.1205	1.00	0.175	pCi/L	01/19/23 14:12	01/30/23 21:45	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*80.4*		*30 - 110*	*01/19/23 14:12*	*01/30/23 21:45*	*1*

Lab Sample ID: LCS 160-597538/2-A
Matrix: Water
Analysis Batch: 598767

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597538

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	12.89		1.52	1.00	0.204	pCi/L	101	75 - 125		
Uranium-238			13.0	12.29		1.47	1.00	0.135	pCi/L	94	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*80.5*		*30 - 110*

Lab Sample ID: 570-123671-T-2-F DU
Matrix: Water
Analysis Batch: 598726

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597538

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Total Uranium	1.09			1.050		0.326	1.00	0.143	pCi/L			0.06	1

Tracer	*DU %Yield*	*DU Qualifier*	*Limits*
Uranium-232	*92.9*		*30 - 110*

Rad

Prep Batch: 597465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	PrecSep-7	
MB 160-597465/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-597465/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-597465/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 597480

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	PrecSep-21	
MB 160-597480/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-597480/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-597480/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 597487

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	PrecSep_0	
MB 160-597487/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-597487/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-597487/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 597488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	LSC_Dist_Susp	
MB 160-597488/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-597488/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
570-123414-Q-1-C MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
570-123038-U-2-C DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 597538

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	ExtChrom	
MB 160-597538/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-597538/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-123671-T-2-F DU	Duplicate	Total/NA	Water	ExtChrom	

Prep Batch: 597551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	Fill_Geo-0	
MB 160-597551/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-597551/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-124230-1 DU	Outfall018_20230115_Comp	Total/NA	Water	Fill_Geo-0	

Prep Batch: 598534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124230-1	Outfall018_20230115_Comp	Total/NA	Water	Evaporation	
MB 160-598534/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-598534/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-598534/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-124230-1 MS	Outfall018_20230115_Comp	Total/NA	Water	Evaporation	
570-124230-1 MSBT	Outfall018_20230115_Comp	Total/NA	Water	Evaporation	
570-124230-1 DU	Outfall018_20230115_Comp	Total/NA	Water	Evaporation	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Client Sample ID: Outfall018_20230115_Comp
Lab Sample ID: 570-124230-1
Date Collected: 01/15/23 09:45
Matrix: Water
Date Received: 01/16/23 17:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Evaporation			200.01 mL	1.0 g	598534	01/27/23 10:37	MST	EET SL
Total/NA	Analysis	900.0		1	1.0 mL	1.0 mL	600138	02/13/23 18:38	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	597551	01/19/23 15:59	JML	EET SL
Total/NA	Analysis	901.1		1			600544	02/16/23 01:52	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	PrecSep-21			753.27 mL	1.0 g	597480	01/19/23 11:31	DJP	EET SL
Total/NA	Analysis	903.0		1			600015	02/10/23 07:37	SCB	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			753.27 mL	1.0 g	597487	01/19/23 12:00	DJP	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	598172	01/25/23 12:06	SCB	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep-7			492.48 mL	1.0 g	597465	01/19/23 09:10	DJP	EET SL
Total/NA	Analysis	905		1			598536	01/27/23 18:27	SCB	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	LSC_Dist_Susp			100.26 mL	1.0 g	597488	01/19/23 12:02	ZR	EET SL
Total/NA	Analysis	906.0		1			597784	01/21/23 01:48	REV	EET SL
	Instrument ID: LSCAQUA									
Total/NA	Prep	ExtChrom			501.81 mL	1.0 mL	597538	01/19/23 14:12	SAC	EET SL
Total/NA	Analysis	A-01-R		1			598734	01/30/23 21:43	FLC	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 570-124230-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124230-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124230-1	Outfall018_20230115_Comp	Water	01/15/23 09:45	01/16/23 17:00

124230

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-124230 Chain of Custody

									R	R	R	R	R	R	R	R	R	R	R	C		
Client Name/Address: Haley & Aldrich, 5333 Mission Center Rd Suite 300, San Diego, CA 92108									ANALYSIS REQUIRED													
Eurofins Calscience Irvine Contact: Christian Bondoc, 17461 Derian Ave Suite #100, Irvine CA 92614, Tel 949-260-3218									Total Recoverable Metals (E200.7): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl- SO4, Nitrate-N Nitrite-N NO3+NO2-N Perchlorate (E300)	Turbidity TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)	Total Recoverable Metals. (E200.7) Fe		Comments
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.																						
Sampler: Adrian Mobeka																						
Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001 002, 011 018] Outfall 018 Comp																						
Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)																						
Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)																						
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD														
Outfall 018 (1)	Outfall018_20230115_Comp	1/15/2023 0945	WM	500 mL Poly	1	HNO_3	90	No	X										X	X		Outfall 018 Fe.
			WM	1 L Glass Amber	2	None	110	No		X												
			WM	1L Poly	1	None	115	No			X											
			WM	500 mL Poly	2	None	120	No				X										
			WM	500 mL Poly	2	None	130	No					X									48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X								48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X						
			WM	1 L Glass Amber	2	None	170	No									X					
			WM	1 L Glass Amber	2	None	180	No										X				
			WM	1L Poly	1	None	185	No							X							
	Outfall018_20230115_Comp_Extra (2)	1/15/2023 0945	WM	1 L Glass Amber	2	None	110	No		H												Hold
			WM	500 mL Poly	2	None	120	No				H										Hold
			WM	500 mL Poly	2	None	130	No					H									Hold
			WM	1 L Glass Amber	2	None	170	No										H				Hold
			WM	1 L Glass Amber	2	None	180	No											H			Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company	Received By	Date/Time:
	1-16-2023/1430	H:A		1-16-23 14:30
	1-16-23 17:00	EC		EC 1-16-23 17:00

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

0.5/0.5 1.4/1.4 soil

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2/20/2020

2019-2020 Rainy Season
Version 4

124 230

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

									R	R	R	R	R	C							
Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108 Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel: 949-260-3218				Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp					ANALYSIS REQUIRED												
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.				Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)																	
Sampler: Adrian Mobeka				Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)																	
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals. (E200.7) Zn (E200.8): Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0) Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA	Total Dissolved Metals. Mercury (E245.1)	Total Dissolved Metals: (E200.7) Fe						Comments
Outfall 018	Outfall018_20230115_Comp_F	1/15/2023 1045	WM	1L Poly	1	None	200	No	X					X							Filter and preserve w/in 24hrs of receipt at lab. Outfall 018 Fe.
			WM	borosilicate vials	1	None	320	No					X								Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
			WM	500 mL Poly	1	NaOH	220	No		X											
	Outfall018_20230115_Comp	1/15/2023 1045	WM	2.5 Gal Cube	1	None	225	No			X										Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No													
			WM	1 Gal Cube	6	None	235	No				X									Only test if first or second rain events of the year Deliver to ABC Labs in Ventura, CA.

Page 28 of 32

Legend. A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	1-16-2023/1430	H:A	[signature] EC	1-16-23 14:32
[signature]	1-16-23 17:00	EC	[signature] EC	1-16-23 17:00

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal _____

Sample Integrity: (Check)
Intact: _____ On Ice:_____
Store samples for 6 months.

Data Requirements. (Check)
No Level IV: _____ All Level IV:__X__

2/20/2023

2019-2020 Rainy Season
Version 4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204388.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-124230-3
Address: 13715 Rider Trail North,	Due Date Requested: 2/20/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - Comp	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Evaporation Gross Alpha/Beta	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230115_Comp (570-124230-1)	1/15/23	09:45 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ______ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) — Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 01/17/23 14:24	Company: EC	Received by: FEDEX	Date/Time:	Company:
Relinquished by: FEDEX	Date/Time:	Company:	Received by: Briana Sharkey-Gonzalez	Date/Time: 1/18/23 9:50AM	Company: ETASTL
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 06/08/2021

ICOC No:
570-204388

Containers

Count	Container Type	Preservative
1	Amber Glass 1 liter - unpreserved	None
1	Plastic 2.5 Gallon	None

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124230-3

Login Number: 124230
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124230-3

Login Number: 124230
List Number: 2
Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis
List Creation: 01/18/23 12:01 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/3/2023 3:17:22 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 018 - GRAB

JOB NUMBER

570-124231-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

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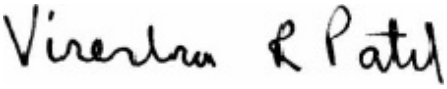
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-124231-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Qualifiers

General Chemistry

Qualifier	Qualifier Description
BU	Analyzed out of holding time
BV	Sample received after holding time expired

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc. Job ID: 570-124231-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Job ID: 570-124231-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124231-1

Comments
No additional comments.

Receipt
The samples were received on 1/16/2023 5:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.3º C.

Receipt Exceptions

Method SM 2540F: The following sample was received outside of holding time for SS: Outfall018_20230114_Grab (570-124231-1).

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method SM 2540F: Insufficient sample volume was available to perform a sample duplicate (DUP) associated with analytical batch 570-296446.

Method SM 2540F: The following sample was received outside of holding time: Outfall018_20230114_Grab (570-124231-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 1664A: The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.
Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-296834.
Method: 1664.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124231-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Client Sample ID: Outfall018_20230114_Grab
Lab Sample ID: 570-124231-1

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	360		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA

Client Sample ID: TB-20230114
Lab Sample ID: 570-124231-3

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-124231-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: Outfall018_20230114_Grab
Lab Sample ID: 570-124231-1
Date Collected: 01/14/23 10:55
Matrix: Water
Date Received: 01/16/23 17:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/17/23 02:30	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/17/23 02:30	1
Trichloroethene	ND		0.50	0.17	ug/L			01/17/23 02:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*		*01/17/23 02:30*	*1*
Toluene-d8 (Surr)	*98*		*60 - 140*		*01/17/23 02:30*	*1*

Client Sample ID: TB-20230114
Lab Sample ID: 570-124231-3
Date Collected: 01/14/23 10:55
Matrix: Water
Date Received: 01/16/23 17:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/17/23 00:59	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/17/23 00:59	1
Trichloroethene	ND		0.50	0.17	ug/L			01/17/23 00:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*60 - 140*		*01/17/23 00:59*	*1*
Toluene-d8 (Surr)	*103*		*60 - 140*		*01/17/23 00:59*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-124231-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

General Chemistry

Client Sample ID: Outfall018_20230114_Grab
Lab Sample ID: 570-124231-1
Date Collected: 01/14/23 10:55
Matrix: Water
Date Received: 01/16/23 17:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM: Oil and Grease (1664A)	ND		1.1	0.56	mg/L		01/18/23 15:01	01/19/23 17:07	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance (SM 2510B)	**360**		1.0	1.0	umhos/cm			01/27/23 16:58	1
Settleable Solids (SM 2540F)	ND	BU BV	0.10	0.10	mL/L			01/17/23 12:53	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124231-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB	TOL										
Lab Sample ID	Client Sample ID	(60-140)	(60-140)										
570-124231-1	Outfall018_20230114_Grab	98	98										
570-124231-3	TB-20230114	97	103										
LCS 570-296226/1003	Lab Control Sample	99	100										
LCSD 570-296226/4	Lab Control Sample Dup	102	100										
MB 570-296226/6	Method Blank	97	101										

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-296226/6
Matrix: Water
Analysis Batch: 296226

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/16/23 19:20	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/16/23 19:20	1
Trichloroethene	ND		0.50	0.17	ug/L			01/16/23 19:20	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*60 - 140*		*01/16/23 19:20*	*1*
Toluene-d8 (Surr)	*101*		*60 - 140*		*01/16/23 19:20*	*1*

Lab Sample ID: LCS 570-296226/1003
Matrix: Water
Analysis Batch: 296226

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1-Dichloroethene			10.0	12.0		ug/L		120	50 - 150		
1,2-Dichloroethane			10.0	11.7		ug/L		117	70 - 130		
Trichloroethene			10.0	12.0		ug/L		120	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*60 - 140*
Toluene-d8 (Surr)	*100*		*60 - 140*

Lab Sample ID: LCSD 570-296226/4
Matrix: Water
Analysis Batch: 296226

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene			10.0	10.6		ug/L		106	50 - 150	12	32
1,2-Dichloroethane			10.0	11.9		ug/L		119	70 - 130	2	49
Trichloroethene			10.0	11.2		ug/L		112	65 - 135	7	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*60 - 140*
Toluene-d8 (Surr)	*100*		*60 - 140*

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-296834/1-A
Matrix: Water
Analysis Batch: 297188

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296834

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM: Oil and Grease	ND		1.0	0.51	mg/L		01/18/23 15:01	01/19/23 17:07	1

Method: 1664A - HEM and SGT-HEM (Continued)

Lab Sample ID: LCS 570-296834/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 297188 — **Prep Batch: 296834**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM: Oil and Grease	40.0	36.1		mg/L		90	78 - 114

Lab Sample ID: LCSD 570-296834/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 297188 — **Prep Batch: 296834**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM: Oil and Grease	40.0	38.4		mg/L		96	78 - 114	6	18

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-299286/9 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 299286

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			01/27/23 16:01	1

Lab Sample ID: 570-125266-A-4 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 299286

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Specific Conductance	7300		7300		umhos/cm		0	25

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124231-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

GC/MS VOA

Analysis Batch: 296226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124231-1	Outfall018_20230114_Grab	Total/NA	Water	624.1	
570-124231-3	TB-20230114	Total/NA	Water	624.1	
MB 570-296226/6	Method Blank	Total/NA	Water	624.1	
LCS 570-296226/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-296226/4	Lab Control Sample Dup	Total/NA	Water	624.1	

General Chemistry

Analysis Batch: 296446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124231-1	Outfall018_20230114_Grab	Total/NA	Water	SM 2540F	

Prep Batch: 296834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124231-1	Outfall018_20230114_Grab	Total/NA	Water	1664A	
MB 570-296834/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-296834/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-296834/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 297188

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124231-1	Outfall018_20230114_Grab	Total/NA	Water	1664A	296834
MB 570-296834/1-A	Method Blank	Total/NA	Water	1664A	296834
LCS 570-296834/2-A	Lab Control Sample	Total/NA	Water	1664A	296834
LCSD 570-296834/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	296834

Analysis Batch: 299286

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124231-1	Outfall018_20230114_Grab	Total/NA	Water	SM 2510B	
MB 570-299286/9	Method Blank	Total/NA	Water	SM 2510B	
570-125266-A-4 DU	Duplicate	Total/NA	Water	SM 2510B	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124231-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Client Sample ID: Outfall018_20230114_Grab
Lab Sample ID: 570-124231-1
Date Collected: 01/14/23 10:55
Matrix: Water
Date Received: 01/16/23 17:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	296226	01/17/23 02:30	A1W	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Prep	1664A			907 mL	1000 mL	296834	01/18/23 15:01	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			297188	01/19/23 17:07	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									
Total/NA	Analysis	SM 2510B		1			299286	01/27/23 16:58	BDH9	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	296446	01/17/23 12:53	GG0B	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB-20230114
Lab Sample ID: 570-124231-3
Date Collected: 01/14/23 10:55
Matrix: Water
Date Received: 01/16/23 17:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	296226	01/17/23 00:59	A1W	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124231-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124231-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4

Protocol References:

1664A = EPA-821-98-002

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Job ID: 570-124231-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124231-1	Outfall018_20230114_Grab	Water	01/14/23 10:55	01/16/23 17:00
570-124231-3	TB-20230114	Water	01/14/23 10:55	01/16/23 17:00

124231

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-124231 Chain of Custody

T12AEFTQB

Client Name/Address.	Project:	Field Readings	Meter serial #
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Grab	Field Readings: (Include units) Time of Readings: 1055 DO 10.02 mg/L pH 6.95 pH unit Temp 49.8 °C/F	
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel. 949-260-3218			
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	Field readings QC Checked by: Date/Time: 1-14-2023/1055	
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599 0702 (cell)		

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R Oil & Grease (E1664A-HEM)	R VOCs - only 1,1-DCE, 1,2-DCA, TCE (E624)	R Settleable Solids (E160.5 (SM2540F))	R Conductivity (SM2510B / E120.1)	Comments
Outfall 018 ①	Outfall018_20230114_Grab	1/14/2023 1055	WM	1 L Glass Amber	2	HCl	15	No	X				
			WM	40 mL VOA	3	HCl	30	No		X			
			WM	1L Poly	1	None	70	No			X		
			WM	500 mL Poly	1	None	75	No				X	
②	Outfall018_20230114_Grab_Extra	1/14/2023 1055	WM	1 L Glass Amber	2	HCl	15	No	H				Hold
			WM	40 mL VOA	3	HCl	30	No		H			Hold
			WM	500 mL Poly	1	None	75	No				H	Hold
Trip Blanks	TB-20230114	1/14/2023 1055	WQ	40 mL VOA	3	HCl	30	No		X			

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Legend: R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
	1-16-2023/1430	H;A	EC	1-16-23 14:30
	1-16-23 17:00	EC	EC	1-16-23 17:00

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: X
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: X

13/1.3 SC11

2/3/2023
2019-2020 Rainy Season
Version 4

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124231-1

Login Number: 124231
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 018 - GRAB

JOB NUMBER

570-124874-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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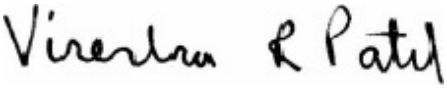
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-124874-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Qualifiers

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc. Job ID: 570-124874-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Job ID: 570-124874-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124874-1

Comments
No additional comments.

Receipt
The samples were received on 1/20/2023 6:30 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.3º C.

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-297633. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method SM 2540F: Insufficient sample volume was available to perform a sample duplicate (DUP) associated with analytical batch 570-297620.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 1664A: The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-298543.
Method: 1664.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124874-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Client Sample ID: Outfall018_20230120_Grab
Lab Sample ID: 570-124874-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
HEM: Oil and Grease	0.60	J,DX	0.99	0.51	mg/L	1		1664A	Total/NA
Specific Conductance	370		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA

Client Sample ID: TB-20230120
Lab Sample ID: 570-124874-3

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: Outfall018_20230120_Grab **Lab Sample ID: 570-124874-1**
Date Collected: 01/20/23 09:45 **Matrix: Water**
Date Received: 01/20/23 18:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/21/23 21:45	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/21/23 21:45	1
Trichloroethene	ND		0.50	0.17	ug/L			01/21/23 21:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*60 - 140*		*01/21/23 21:45*	*1*
Toluene-d8 (Surr)	*99*		*60 - 140*		*01/21/23 21:45*	*1*

Client Sample ID: TB-20230120 **Lab Sample ID: 570-124874-3**
Date Collected: 01/20/23 09:45 **Matrix: Water**
Date Received: 01/20/23 18:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/21/23 19:08	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/21/23 19:08	1
Trichloroethene	ND		0.50	0.17	ug/L			01/21/23 19:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*		*01/21/23 19:08*	*1*
Toluene-d8 (Surr)	*96*		*60 - 140*		*01/21/23 19:08*	*1*

General Chemistry

Client Sample ID: Outfall018_20230120_Grab
Lab Sample ID: 570-124874-1
Date Collected: 01/20/23 09:45
Matrix: Water
Date Received: 01/20/23 18:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM: Oil and Grease (1664A)	**0.60**	**J,DX**	0.99	0.51	mg/L		01/25/23 13:07	01/25/23 20:05	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance (SM 2510B)	**370**		1.0	1.0	umhos/cm			01/30/23 16:24	1
Settleable Solids (SM 2540F)	ND		0.10	0.10	mL/L			01/21/23 09:59	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124874-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		BFB	TOL								
Lab Sample ID	Client Sample ID	(60-140)	(60-140)								
570-124874-1	Outfall018_20230120_Grab	95	99								
570-124874-3	TB-20230120	98	96								
LCS 570-297633/1003	Lab Control Sample	102	99								
LCSD 570-297633/4	Lab Control Sample Dup	100	101								
MB 570-297633/6	Method Blank	98	97								

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-297633/6
Matrix: Water
Analysis Batch: 297633

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			01/21/23 12:23	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			01/21/23 12:23	1
Trichloroethene	ND		0.50	0.17	ug/L			01/21/23 12:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*		*01/21/23 12:23*	*1*
Toluene-d8 (Surr)	*97*		*60 - 140*		*01/21/23 12:23*	*1*

Lab Sample ID: LCS 570-297633/1003
Matrix: Water
Analysis Batch: 297633

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1-Dichloroethene			10.0	9.90		ug/L		99	50 - 150		
1,2-Dichloroethane			10.0	9.77		ug/L		98	70 - 130		
Trichloroethene			10.0	10.0		ug/L		100	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*60 - 140*
Toluene-d8 (Surr)	*99*		*60 - 140*

Lab Sample ID: LCSD 570-297633/4
Matrix: Water
Analysis Batch: 297633

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene			10.0	9.59		ug/L		96	50 - 150	3	32
1,2-Dichloroethane			10.0	9.76		ug/L		98	70 - 130	0	49
Trichloroethene			10.0	9.34		ug/L		93	65 - 135	7	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*60 - 140*
Toluene-d8 (Surr)	*101*		*60 - 140*

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-298543/1-A
Matrix: Water
Analysis Batch: 298672

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 298543

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM: Oil and Grease	ND		1.0	0.51	mg/L		01/25/23 13:07	01/25/23 20:05	1

Method: 1664A - HEM and SGT-HEM (Continued)

Lab Sample ID: LCS 570-298543/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 298672 — **Prep Batch: 298543**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM: Oil and Grease	40.0	38.1		mg/L		95	78 - 114

Lab Sample ID: LCSD 570-298543/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 298672 — **Prep Batch: 298543**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM: Oil and Grease	40.0	38.6		mg/L		97	78 - 114	1	18

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-299719/7 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 299719

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			01/30/23 15:46	1

Lab Sample ID: 570-124688-K-4 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 299719

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Specific Conductance	630		640		umhos/cm		1	25

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124874-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

GC/MS VOA

Analysis Batch: 297633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124874-1	Outfall018_20230120_Grab	Total/NA	Water	624.1	
570-124874-3	TB-20230120	Total/NA	Water	624.1	
MB 570-297633/6	Method Blank	Total/NA	Water	624.1	
LCS 570-297633/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-297633/4	Lab Control Sample Dup	Total/NA	Water	624.1	

General Chemistry

Analysis Batch: 297620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124874-1	Outfall018_20230120_Grab	Total/NA	Water	SM 2540F	

Prep Batch: 298543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124874-1	Outfall018_20230120_Grab	Total/NA	Water	1664A	
MB 570-298543/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-298543/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-298543/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 298672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124874-1	Outfall018_20230120_Grab	Total/NA	Water	1664A	298543
MB 570-298543/1-A	Method Blank	Total/NA	Water	1664A	298543
LCS 570-298543/2-A	Lab Control Sample	Total/NA	Water	1664A	298543
LCSD 570-298543/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	298543

Analysis Batch: 299719

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124874-1	Outfall018_20230120_Grab	Total/NA	Water	SM 2510B	
MB 570-299719/7	Method Blank	Total/NA	Water	SM 2510B	
570-124688-K-4 DU	Duplicate	Total/NA	Water	SM 2510B	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124874-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Client Sample ID: Outfall018_20230120_Grab
Lab Sample ID: 570-124874-1
Date Collected: 01/20/23 09:45
Matrix: Water
Date Received: 01/20/23 18:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	297633	01/21/23 21:45	A1W	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Prep	1664A			1006 mL	1000 mL	298543	01/25/23 13:07	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			298672	01/25/23 20:05	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									
Total/NA	Analysis	SM 2510B		1			299719	01/30/23 16:24	BDH9	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	297620	01/21/23 09:59	ZVB7	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB-20230120
Lab Sample ID: 570-124874-3
Date Collected: 01/20/23 09:45
Matrix: Water
Date Received: 01/20/23 18:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	297633	01/21/23 19:08	A1W	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124874-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124874-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4

Protocol References:

1664A = EPA-821-98-002

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124874-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - GRAB

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124874-1	Outfall018_20230120_Grab	Water	01/20/23 09:45	01/20/23 18:30
570-124874-3	TB-20230120	Water	01/20/23 09:45	01/20/23 18:30

124874

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Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

TRIP FT9B

Client Name/Address:	Project:	ANALYSIS REQUIRED	Field Readings	Meter serial #
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Grab	R R R R	Field Readings: (Include units) Time of Readings: 0945 DO 3.12 mg/L pH 8.28 pH unit Temp 46.8 °C/°F	
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218				
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)		Field readings QC Checked by: Date/Time: 1-20-2023/0945	
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)			

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Oil & Grease (E1664A-HEM)	VOCs - only 1,1-DCE, 1,2-DCA, TCE (E624)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Comments
Outfall 018	Outfall018_20230120_Grab	1/20/2023 0945	WM	1 L Glass Amber	2	HCl	15	No	X				
			WM	40 mL VOA	3	HCl	30	No		X			
			WM	1L Poly	1	None	70	No			X		
			WM	500 mL Poly	1	None	75	No				X	
	Outfall018_20230120_Grab_Extra	1/20/2023 0945	WM										
			WM	40 mL VOA	3	HCl	30	No		H			Hold
			WM	500 mL Poly	1	None	75	No				H	Hold
Trip Blanks	TB-20230120	1/20/2023 0945	WQ	40 mL VOA	3	HCl	30	No		X			

570-124874 Chain of Custody

Legend: R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Mark Dominick	1-20-2023/1310	H.A		1/20/23 1310 EC
	1/20/23 1830	EC		1/20/23 1830

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: X
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: X

2.3/2.3 SCH

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2/3/2023

2019-2020 Rainy Season
Version 4

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124874-1

Login Number: 124874
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 018 - Comp

JOB NUMBER

570-124898-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Eurofins Calscience

Job Notes

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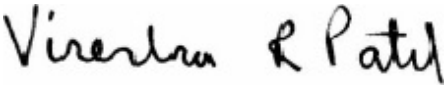
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-124898-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
BA	Relative percent difference out of control
BB	Sample > 4X spike concentration

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
IB	CCV recovery above limit; analyte not detected
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124898-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124898-1

Comments
No additional comments.

Receipt
The samples were received on 1/21/2023 11:40 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.9º C and 2.0º C.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

HPLC/IC
Method 300.0: The following samples were diluted due to the nature of the sample matrix: (570-124934-D-2 MS) and (570-124934-D-2 MSD). Because of this dilution, the surrogate spike and matrix spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 200.7 Rev 4.4: The matrix spike (MS) recoveries of Iron for preparation batch 570-298189 and analytical batch 570-298286 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 245.1: The continuing calibration verification (CCV) associated with batch 570-298644 recovered above the upper control limit for Mercury. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 570-298459/9-A).

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: Outfall018_20230121_Comp_F (570-124898-3). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 2540D: Sample was hard to filter. Use less amount of sample.

Outfall018_20230121_Comp (570-124898-1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-297984. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.
Method 608.1

Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with

Job ID: 570-124898-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

preparation batch 570-298062. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. 625 Sim

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Client Sample ID: Outfall018_20230121_Comp
Lab Sample ID: 570-124898-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.3		1.0	0.36	mg/L	1		300.0	Total/NA
Nitrite as N	0.11		0.10	0.043	mg/L	1		300.0	Total/NA
Nitrate as N	0.74		0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate	110		2.0	0.47	mg/L	2		300.0	Total/NA
Nitrate Nitrite as N	0.85		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Copper	1.5	J,DX	2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	4.1	J,DX	20	3.7	ug/L	1		200.8	Total Recoverable
Ammonia	0.037	J,DX	0.075	0.032	mg/L	1		350.1	Total/NA
Turbidity	0.60		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Dissolved Solids	270		10	8.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	1.8	J,DX	2.0	1.7	mg/L	1		SM 2540D	Total/NA
Biochemical Oxygen Demand	4.0		2.0	1.0	mg/L	1		SM5210B	Total/NA

Client Sample ID: Outfall018_20230121_Comp_F
Lab Sample ID: 570-124898-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	1.4	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: Outfall018_20230121_Comp
Lab Sample ID: 570-124898-1
Date Collected: 01/21/23 09:25
Matrix: Water
Date Received: 01/21/23 11:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		0.95	0.13	ug/L		01/24/23 08:32	02/02/23 21:09	1
2,4-Dinitrotoluene	ND		0.19	0.11	ug/L		01/24/23 08:32	02/02/23 21:09	1
Bis(2-ethylhexyl) phthalate	ND		4.7	3.4	ug/L		01/24/23 08:32	02/02/23 21:09	1
N-Nitrosodimethylamine	ND		0.19	0.18	ug/L		01/24/23 08:32	02/02/23 21:09	1
Pentachlorophenol	ND		0.95	0.80	ug/L		01/24/23 08:32	02/02/23 21:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*54*		*31 - 120*	*01/24/23 08:32*	*02/02/23 21:09*	*1*
Phenol-d6 (Surr)	*23*		*10 - 120*	*01/24/23 08:32*	*02/02/23 21:09*	*1*
p-Terphenyl-d14 (Surr)	*61*		*45 - 120*	*01/24/23 08:32*	*02/02/23 21:09*	*1*
2,4,6-Tribromophenol	*81*		*28 - 127*	*01/24/23 08:32*	*02/02/23 21:09*	*1*
2-Fluorophenol	*37*		*17 - 120*	*01/24/23 08:32*	*02/02/23 21:09*	*1*
Nitrobenzene-d5	*59*		*27 - 120*	*01/24/23 08:32*	*02/02/23 21:09*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: 40CFR136A 608.3 - Organochlorine Pesticides in Water

Client Sample ID: Outfall018_20230121_Comp
Lab Sample ID: 570-124898-1
Date Collected: 01/21/23 09:25
Matrix: Water
Date Received: 01/21/23 11:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		01/23/23 18:56	02/02/23 01:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*55*		*20 - 139*	*01/23/23 18:56*	*02/02/23 01:35*	*1*
DCB Decachlorobiphenyl (Surr)	*60*		*20 - 154*	*01/23/23 18:56*	*02/02/23 01:35*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: Outfall018_20230121_Comp
Lab Sample ID: 570-124898-1
Date Collected: 01/21/23 09:25
Matrix: Water
Date Received: 01/21/23 11:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.3		1.0	0.36	mg/L			01/21/23 13:15	1
Nitrite as N	0.11		0.10	0.043	mg/L			01/21/23 13:15	1
Nitrate as N	0.74		0.10	0.020	mg/L			01/21/23 13:15	1
Sulfate	110		2.0	0.47	mg/L			01/23/23 23:41	2

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: Outfall018_20230121_Comp
Lab Sample ID: 570-124898-1
Date Collected: 01/21/23 09:25
Matrix: Water
Date Received: 01/21/23 11:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/27/23 06:33	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: Outfall018_20230121_Comp
Lab Sample ID: 570-124898-1
Date Collected: 01/21/23 09:25
Matrix: Water
Date Received: 01/21/23 11:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	0.85		0.10	0.020	mg/L			01/24/23 12:20	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: Outfall018_20230121_Comp
Lab Sample ID: 570-124898-1
Date Collected: 01/21/23 09:25
Matrix: Water
Date Received: 01/21/23 11:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/24/23 09:53	01/24/23 14:14	1
Copper	**1.5**	**J,DX**	2.0	0.32	ug/L		01/24/23 09:53	01/24/23 14:14	1
Lead	ND		1.0	0.12	ug/L		01/24/23 09:53	01/24/23 14:14	1
Selenium	ND		2.0	0.52	ug/L		01/24/23 09:53	01/24/23 14:14	1
Iron	**4.1**	**J,DX**	20	3.7	ug/L		01/24/23 09:53	01/24/23 14:14	1
Zinc	ND		20	2.8	ug/L		01/24/23 09:53	01/24/23 14:14	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: Outfall018_20230121_Comp_F
Lab Sample ID: 570-124898-3
Date Collected: 01/21/23 09:25
Matrix: Water
Date Received: 01/21/23 11:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			01/25/23 14:44	1
Copper	**1.4**	**J,DX BU**	2.0	0.32	ug/L			01/25/23 14:44	1
Lead	ND	BU	1.0	0.12	ug/L			01/25/23 14:44	1
Selenium	ND	BU	2.0	0.52	ug/L			01/25/23 14:44	1
Iron	ND	BU	20	3.7	ug/L			01/25/23 14:44	1
Zinc	ND	BU	20	2.8	ug/L			01/25/23 14:44	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: Outfall018_20230121_Comp
Lab Sample ID: 570-124898-1
Date Collected: 01/21/23 09:25
Matrix: Water
Date Received: 01/21/23 11:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	IB	0.20	0.12	ug/L		01/24/23 17:46	01/25/23 16:02	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: Outfall018_20230121_Comp_F
Lab Sample ID: 570-124898-3
Date Collected: 01/21/23 09:25
Matrix: Water
Date Received: 01/21/23 11:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	BU	0.20	0.12	ug/L		01/24/23 18:15	01/25/23 15:36	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

General Chemistry

Client Sample ID: Outfall018_20230121_Comp
Lab Sample ID: 570-124898-1
Date Collected: 01/21/23 09:25
Matrix: Water
Date Received: 01/21/23 11:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	**0.037**	**J,DX**	0.075	0.032	mg/L		01/30/23 12:27	01/30/23 14:37	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			01/23/23 15:39	1
Turbidity (SM 2130B)	**0.60**		0.05	0.05	NTU			01/21/23 15:06	1
Total Dissolved Solids (SM 2540C)	**270**		10	8.7	mg/L			01/27/23 17:13	1
Total Suspended Solids (SM 2540D)	**1.8**	**J,DX**	2.0	1.7	mg/L			01/23/23 16:51	1
MBAS (SM 5540C)	ND		0.30	0.054	mg/L		01/21/23 15:20	01/21/23 16:47	1
Biochemical Oxygen Demand (SM5210B)	**4.0**		2.0	1.0	mg/L			01/21/23 13:45	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Job ID: 570-124898-1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	PHL6	TPHd14	TBP	2FP	NBZ
Lab Sample ID	Client Sample ID	(31-120)	(10-120)	(45-120)	(28-127)	(17-120)	(27-120)
570-124898-1	Outfall018_20230121_Comp	54	23	61	81	37	59
LCS 570-298062/2-A	Lab Control Sample	74	37	84	89	57	72
LCSD 570-298062/3-A	Lab Control Sample Dup	77	39	87	94	61	75
MB 570-298062/1-A	Method Blank	67	34	82	83	54	80

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX2	DCB1
Lab Sample ID	Client Sample ID	(20-139)	(20-154)
570-124898-1	Outfall018_20230121_Comp	55	60

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-298062/1-A
Matrix: Water
Analysis Batch: 300591

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 298062

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		01/24/23 08:32	02/02/23 14:02	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		01/24/23 08:32	02/02/23 14:02	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		01/24/23 08:32	02/02/23 14:02	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		01/24/23 08:32	02/02/23 14:02	1
Pentachlorophenol	ND		1.0	0.84	ug/L		01/24/23 08:32	02/02/23 14:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*67*		*31 - 120*	*01/24/23 08:32*	*02/02/23 14:02*	*1*
Phenol-d6 (Surr)	*34*		*10 - 120*	*01/24/23 08:32*	*02/02/23 14:02*	*1*
p-Terphenyl-d14 (Surr)	*82*		*45 - 120*	*01/24/23 08:32*	*02/02/23 14:02*	*1*
2,4,6-Tribromophenol	*83*		*28 - 127*	*01/24/23 08:32*	*02/02/23 14:02*	*1*
2-Fluorophenol	*54*		*17 - 120*	*01/24/23 08:32*	*02/02/23 14:02*	*1*
Nitrobenzene-d5	*80*		*27 - 120*	*01/24/23 08:32*	*02/02/23 14:02*	*1*

Lab Sample ID: LCS 570-298062/2-A
Matrix: Water
Analysis Batch: 300591

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 298062

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4,6-Trichlorophenol	20.0	18.2		ug/L		91	52 - 129
2,4-Dinitrotoluene	20.0	19.8		ug/L		99	48 - 127
Bis(2-ethylhexyl) phthalate	20.0	19.5		ug/L		97	29 - 137
N-Nitrosodimethylamine	20.0	11.8		ug/L		59	20 - 120
Pentachlorophenol	20.0	16.5		ug/L		83	38 - 152

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*74*		*31 - 120*
Phenol-d6 (Surr)	*37*		*10 - 120*
p-Terphenyl-d14 (Surr)	*84*		*45 - 120*
2,4,6-Tribromophenol	*89*		*28 - 127*
2-Fluorophenol	*57*		*17 - 120*
Nitrobenzene-d5	*72*		*27 - 120*

Lab Sample ID: LCSD 570-298062/3-A
Matrix: Water
Analysis Batch: 300591

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 298062

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4,6-Trichlorophenol	20.0	19.0		ug/L		95	52 - 129	5	35
2,4-Dinitrotoluene	20.0	20.3		ug/L		102	48 - 127	3	25
Bis(2-ethylhexyl) phthalate	20.0	20.2		ug/L		101	29 - 137	4	50
N-Nitrosodimethylamine	20.0	12.3		ug/L		62	20 - 120	5	21
Pentachlorophenol	20.0	18.1		ug/L		91	38 - 152	9	52

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*77*		*31 - 120*
Phenol-d6 (Surr)	*39*		*10 - 120*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-298062/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 300591 — **Prep Batch: 298062**

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
p-Terphenyl-d14 (Surr)	*87*		*45 - 120*
2,4,6-Tribromophenol	*94*		*28 - 127*
2-Fluorophenol	*61*		*17 - 120*
Nitrobenzene-d5	*75*		*27 - 120*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-297605/5 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 297605

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			01/21/23 10:44	1
Nitrate as N	ND		0.10	0.020	mg/L			01/21/23 10:44	1

Lab Sample ID: LCS 570-297605/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 297605

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.49		mg/L		100	90 - 110
Nitrate as N	5.00	4.97		mg/L		99	90 - 110

Lab Sample ID: LCSD 570-297605/7 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 297605

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.48		mg/L		99	90 - 110	0	15
Nitrate as N	5.00	4.97		mg/L		99	90 - 110	0	15

Lab Sample ID: 570-124967-A-1 MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 297605

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	0.044	J,DX	2.50	2.57		mg/L		101	80 - 120
Nitrate as N	0.33		5.00	5.43		mg/L		102	80 - 120

Lab Sample ID: 570-124967-A-1 MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 297605

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	0.044	J,DX	2.50	2.55		mg/L		100	80 - 120	1	20
Nitrate as N	0.33		5.00	5.45		mg/L		102	80 - 120	0	20

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 570-297606/5
Matrix: Water
Analysis Batch: 297606

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			01/21/23 10:44	1
Sulfate	ND		1.0	0.24	mg/L			01/21/23 10:44	1

Lab Sample ID: LCS 570-297606/6
Matrix: Water
Analysis Batch: 297606

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	49.9		mg/L		100	90 - 110
Sulfate	50.0	50.2		mg/L		100	90 - 110

Lab Sample ID: LCSD 570-297606/7
Matrix: Water
Analysis Batch: 297606

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	50.0		mg/L		100	90 - 110	0	15
Sulfate	50.0	50.1		mg/L		100	90 - 110	0	15

Lab Sample ID: 570-124967-A-1 MS
Matrix: Water
Analysis Batch: 297606

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	3.6		50.0	55.3		mg/L		103	80 - 120
Sulfate	10		50.0	63.2		mg/L		106	80 - 120

Lab Sample ID: 570-124967-A-1 MSD
Matrix: Water
Analysis Batch: 297606

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	3.6		50.0	55.2		mg/L		103	80 - 120	0	20
Sulfate	10		50.0	63.2		mg/L		106	80 - 120	0	20

Lab Sample ID: MB 570-297671/5
Matrix: Water
Analysis Batch: 297671

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.24	mg/L			01/23/23 07:14	1

Lab Sample ID: LCS 570-297671/6
Matrix: Water
Analysis Batch: 297671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	50.0	50.7		mg/L		101	90 - 110

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 570-297671/7
Matrix: Water
Analysis Batch: 297671

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate			50.0	50.8		mg/L		102	90 - 110	0	15

Lab Sample ID: 570-124934-D-2 MS
Matrix: Water
Analysis Batch: 297671

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	36000		50.0	33600	BB	mg/L		-4496	80 - 120		
Sulfate	17000		50.0	16200	BB	mg/L		-2028	80 - 120		

Lab Sample ID: 570-124934-D-2 MSD
Matrix: Water
Analysis Batch: 297671

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	36000		50.0	336000	BB BA	mg/L		600144	80 - 120	164	20
Sulfate	17000		50.0	163000	BB BA	mg/L		291444	80 - 120	164	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-298791/7
Matrix: Water
Analysis Batch: 298791

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/27/23 01:50	1

Lab Sample ID: LCS 570-298791/8
Matrix: Water
Analysis Batch: 298791

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	24.7		ug/L		99	85 - 115		

Lab Sample ID: LCSD 570-298791/9
Matrix: Water
Analysis Batch: 298791

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	25.4		ug/L		102	85 - 115	3	15

Lab Sample ID: 570-125345-D-2 MS
Matrix: Water
Analysis Batch: 298791

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	41		50.0	94.2		ug/L		107	80 - 120		

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: 570-125345-D-2 MSD
Matrix: Water
Analysis Batch: 298791

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	41		50.0	93.8		ug/L		106	80 - 120	0	15

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-298096/1-A
Matrix: Water
Analysis Batch: 298201

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 298096

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/24/23 09:53	01/24/23 13:19	1
Copper	ND		2.0	0.32	ug/L		01/24/23 09:53	01/24/23 13:19	1
Lead	0.142	J,DX	1.0	0.12	ug/L		01/24/23 09:53	01/24/23 13:19	1
Selenium	ND		2.0	0.52	ug/L		01/24/23 09:53	01/24/23 13:19	1
Iron	ND		20	3.7	ug/L		01/24/23 09:53	01/24/23 13:19	1
Zinc	ND		20	2.8	ug/L		01/24/23 09:53	01/24/23 13:19	1

Lab Sample ID: LCS 570-298096/2-A
Matrix: Water
Analysis Batch: 298201

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 298096

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	81.9		ug/L		102	85 - 115
Copper	80.0	79.1		ug/L		99	85 - 115
Lead	80.0	80.5		ug/L		101	85 - 115
Selenium	80.0	80.1		ug/L		100	85 - 115
Iron	800	839		ug/L		105	85 - 115
Zinc	80.0	79.8		ug/L		100	85 - 115

Lab Sample ID: LCSD 570-298096/3-A
Matrix: Water
Analysis Batch: 298201

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 298096

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	80.8		ug/L		101	85 - 115	1	20
Copper	80.0	78.9		ug/L		99	85 - 115	0	20
Lead	80.0	81.6		ug/L		102	85 - 115	1	20
Selenium	80.0	77.8		ug/L		97	85 - 115	3	20
Iron	800	829		ug/L		104	85 - 115	1	20
Zinc	80.0	79.8		ug/L		100	85 - 115	0	20

Lab Sample ID: 570-124890-D-1-C MS
Matrix: Water
Analysis Batch: 298201

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 298096

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND		80.0	81.0		ug/L		101	80 - 120
Copper	1.4	J,DX	80.0	80.8		ug/L		99	80 - 120
Lead	ND		80.0	81.5		ug/L		102	80 - 120
Selenium	ND		80.0	78.3		ug/L		98	80 - 120
Iron	21		800	849		ug/L		103	80 - 120

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-124890-D-1-C MS
Matrix: Water
Analysis Batch: 298201

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 298096

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Zinc	ND		80.0	81.4		ug/L		102	80 - 120

Lab Sample ID: 570-124890-D-1-D MSD
Matrix: Water
Analysis Batch: 298201

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 298096

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND		80.0	82.1		ug/L		103	80 - 120	1	20
Copper	1.4	J,DX	80.0	82.9		ug/L		102	80 - 120	3	20
Lead	ND		80.0	82.5		ug/L		103	80 - 120	1	20
Selenium	ND		80.0	79.0		ug/L		99	80 - 120	1	20
Iron	21		800	878		ug/L		107	80 - 120	3	20
Zinc	ND		80.0	82.0		ug/L		102	80 - 120	1	20

Lab Sample ID: MB 570-298550/1-A
Matrix: Water
Analysis Batch: 298597

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L			01/25/23 14:41	1
Copper	ND		2.0	0.32	ug/L			01/25/23 14:41	1
Lead	ND		1.0	0.12	ug/L			01/25/23 14:41	1
Selenium	ND		2.0	0.52	ug/L			01/25/23 14:41	1
Iron	ND		20	3.7	ug/L			01/25/23 14:41	1
Zinc	ND		20	2.8	ug/L			01/25/23 14:41	1

Lab Sample ID: LCS 570-298550/2-A
Matrix: Water
Analysis Batch: 298597

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	77.8		ug/L		97	85 - 115
Copper	80.0	72.8		ug/L		91	85 - 115
Lead	80.0	78.4		ug/L		98	85 - 115
Selenium	80.0	77.7		ug/L		97	85 - 115
Iron	800	783		ug/L		98	85 - 115
Zinc	80.0	74.9		ug/L		94	85 - 115

Lab Sample ID: LCSD 570-298550/3-A
Matrix: Water
Analysis Batch: 298597

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	77.6		ug/L		97	85 - 115	0	20
Copper	80.0	73.5		ug/L		92	85 - 115	1	20
Lead	80.0	78.0		ug/L		97	85 - 115	1	20
Selenium	80.0	74.9		ug/L		94	85 - 115	4	20
Iron	800	768		ug/L		96	85 - 115	2	20
Zinc	80.0	75.4		ug/L		94	85 - 115	1	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-298289/1-A
Matrix: Water
Analysis Batch: 298644

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 298289

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		01/24/23 17:46	01/25/23 15:38	1

Lab Sample ID: LCS 570-298289/2-A
Matrix: Water
Analysis Batch: 298644

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 298289

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	8.65		ug/L		108	85 - 115

Lab Sample ID: LCSD 570-298289/3-A
Matrix: Water
Analysis Batch: 298644

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 298289

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	8.00	8.61		ug/L		108	85 - 115	0	10

Lab Sample ID: MB 570-298285/1-B
Matrix: Water
Analysis Batch: 298644

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 298287

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		01/24/23 18:15	01/25/23 15:14	1

Lab Sample ID: LCS 570-298285/2-B
Matrix: Water
Analysis Batch: 298644

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 298287

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	8.38		ug/L		105	85 - 115

Lab Sample ID: LCSD 570-298285/3-B
Matrix: Water
Analysis Batch: 298644

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 298287

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	8.00	8.19		ug/L		102	85 - 115	2	10

Lab Sample ID: 570-124873-A-3-E MS
Matrix: Water
Analysis Batch: 298644

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 298287

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		8.00	8.36		ug/L		105	85 - 115

Lab Sample ID: 570-124873-A-3-F MSD
Matrix: Water
Analysis Batch: 298644

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 298287

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		8.00	8.47		ug/L		106	85 - 115	1	10

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: 570-124653-L-2-D MS
Matrix: Water
Analysis Batch: 298644

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 298289

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		8.00	8.55		ug/L		107	85 - 115

Lab Sample ID: 570-124653-L-2-E MSD
Matrix: Water
Analysis Batch: 298644

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 298289

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		8.00	8.52	IB	ug/L		106	85 - 115	0	10

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-299646/5-A
Matrix: Water
Analysis Batch: 299684

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 299646

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		01/30/23 12:27	01/30/23 13:57	1

Lab Sample ID: LCS 570-299646/6-A
Matrix: Water
Analysis Batch: 299684

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 299646

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	0.500	0.475		mg/L		95	90 - 110

Lab Sample ID: LCSD 570-299646/7-A
Matrix: Water
Analysis Batch: 299684

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 299646

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	0.500	0.482		mg/L		96	90 - 110	1	20

Lab Sample ID: 570-124924-X-1-A MS
Matrix: Water
Analysis Batch: 299684

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 299646

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	ND		0.500	0.495		mg/L		99	90 - 110

Lab Sample ID: 570-124924-X-1-B MSD
Matrix: Water
Analysis Batch: 299684

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 299646

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	ND		0.500	0.493		mg/L		99	90 - 110	1	25

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-297946/11
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			01/23/23 13:11	1

Lab Sample ID: LCS 570-297946/14
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	267		ug/L		107	90 - 110

Lab Sample ID: LCSD 570-297946/13
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	250	248		ug/L		99	90 - 110	7	20

Lab Sample ID: MRL 570-297946/10
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	4.66	J,DX	ug/L		93	50 - 150

Lab Sample ID: 570-124243-S-1 MS
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	ND		250	216		ug/L		86	70 - 130

Lab Sample ID: 570-124243-S-1 MSD
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	ND		250	227		ug/L		91	70 - 130	5	30

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-297650/1
Matrix: Water
Analysis Batch: 297650

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	1000	1000		NTU		101.0	99.0 - 101.0

Method: SM 2130B - Turbidity (Continued)

Lab Sample ID: LCSSRM 570-297650/2
Matrix: Water
Analysis Batch: 297650

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	10.0	10		NTU		101.0	99.0 - 101.0

Lab Sample ID: LCSSRM 570-297650/3
Matrix: Water
Analysis Batch: 297650

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Lab Sample ID: 570-124868-E-1 DU
Matrix: Water
Analysis Batch: 297650

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Turbidity	9.0		9.0		NTU		0.1	25

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-299271/1
Matrix: Water
Analysis Batch: 299271

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			01/27/23 17:13	1

Lab Sample ID: LCS 570-299271/2
Matrix: Water
Analysis Batch: 299271

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	1010		mg/L		101	84 - 108

Lab Sample ID: LCSD 570-299271/3
Matrix: Water
Analysis Batch: 299271

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1020		mg/L		102	84 - 108	1	10

Lab Sample ID: 570-124898-1 DU
Matrix: Water
Analysis Batch: 299271

Client Sample ID: Outfall018_20230121_Comp
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	270		266		mg/L		1	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-297947/1
Matrix: Water
Analysis Batch: 297947

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/23/23 16:51	1

Lab Sample ID: LCS 570-297947/2
Matrix: Water
Analysis Batch: 297947

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	92.0		mg/L		92	77 - 116

Lab Sample ID: LCSD 570-297947/3
Matrix: Water
Analysis Batch: 297947

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	93.0		mg/L		93	77 - 116	1	10

Lab Sample ID: 590-19662-B-1 DU
Matrix: Water
Analysis Batch: 297947

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	2300		2060		mg/L		10	10

Lab Sample ID: MB 570-298283/1
Matrix: Water
Analysis Batch: 298283

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/24/23 17:38	1

Lab Sample ID: LCS 570-298283/2
Matrix: Water
Analysis Batch: 298283

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	82.0		mg/L		82	77 - 116

Lab Sample ID: LCSD 570-298283/3
Matrix: Water
Analysis Batch: 298283

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	85.0		mg/L		85	77 - 116	4	10

Lab Sample ID: 570-125023-A-2 DU
Matrix: Water
Analysis Batch: 298283

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	10		10.2		mg/L		2	10

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-297652/5-A
Matrix: Water
Analysis Batch: 297651
Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 297652

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.30	0.054	mg/L		01/21/23 15:20	01/21/23 16:36	1

Lab Sample ID: LCS 570-297652/6-A
Matrix: Water
Analysis Batch: 297651
Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 297652

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
MBAS	1.00	1.06		mg/L		106	85 - 111

Lab Sample ID: LCSD 570-297652/7-A
Matrix: Water
Analysis Batch: 297651
Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 297652

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS	1.00	1.06		mg/L		106	85 - 111	0	7

Lab Sample ID: 570-124873-A-1-A MS
Matrix: Water
Analysis Batch: 297651
Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 297652

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
MBAS	ND		1.00	1.16		mg/L		116	75 - 125

Lab Sample ID: 570-124873-A-1-B MSD
Matrix: Water
Analysis Batch: 297651
Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 297652

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS	ND		1.00	1.15		mg/L		115	75 - 125	1	12

Method: SM5210B - BOD, 5 Day

Lab Sample ID: USB 570-298979/2
Matrix: Water
Analysis Batch: 298979
Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L			01/21/23 09:22	1

Lab Sample ID: LCS 570-298979/4
Matrix: Water
Analysis Batch: 298979
Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	199	218		mg/L		110	84.6 - 115.4

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: SM5210B - BOD, 5 Day (Continued)

Lab Sample ID: 570-124873-I-1 DU
Matrix: Water
Analysis Batch: 298979

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Biochemical Oxygen Demand	ND			ND		mg/L				NC	25

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Job ID: 570-124898-1

GC/MS Semi VOA

Prep Batch: 298062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	625	
MB 570-298062/1-A	Method Blank	Total/NA	Water	625	
LCS 570-298062/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-298062/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 300591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	625.1 SIM	298062
MB 570-298062/1-A	Method Blank	Total/NA	Water	625.1 SIM	298062
LCS 570-298062/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	298062
LCSD 570-298062/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	298062

GC Semi VOA

Prep Batch: 297984

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	608	

Analysis Batch: 300360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	608.3	297984

HPLC/IC

Analysis Batch: 297605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	300.0	
MB 570-297605/5	Method Blank	Total/NA	Water	300.0	
LCS 570-297605/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-297605/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-124967-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
570-124967-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 297606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	300.0	
MB 570-297606/5	Method Blank	Total/NA	Water	300.0	
LCS 570-297606/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-297606/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-124967-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
570-124967-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 297671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	300.0	
MB 570-297671/5	Method Blank	Total/NA	Water	300.0	
LCS 570-297671/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-297671/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-124934-D-2 MS	Matrix Spike	Total/NA	Water	300.0	
570-124934-D-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

HPLC/IC

Analysis Batch: 298163

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	NO2NO3 Calc	

Analysis Batch: 298791

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	314.0	
MB 570-298791/7	Method Blank	Total/NA	Water	314.0	
LCS 570-298791/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-298791/9	Lab Control Sample Dup	Total/NA	Water	314.0	
570-125345-D-2 MS	Matrix Spike	Total/NA	Water	314.0	
570-125345-D-2 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Metals

Prep Batch: 298096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total Recoverable	Water	200.8	
MB 570-298096/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-298096/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-298096/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-124890-D-1-C MS	Matrix Spike	Total Recoverable	Water	200.8	
570-124890-D-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	

Analysis Batch: 298201

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-298096/1-A	Method Blank	Total Recoverable	Water	200.8	298096
LCS 570-298096/2-A	Lab Control Sample	Total Recoverable	Water	200.8	298096
LCSD 570-298096/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	298096
570-124890-D-1-C MS	Matrix Spike	Total Recoverable	Water	200.8	298096
570-124890-D-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	298096

Analysis Batch: 298215

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total Recoverable	Water	200.8	298096

Filtration Batch: 298285

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-3	Outfall018_20230121_Comp_F	Dissolved	Water	Filtration	
MB 570-298285/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-298285/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-298285/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-124873-A-3-E MS	Matrix Spike	Dissolved	Water	Filtration	
570-124873-A-3-F MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Prep Batch: 298287

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-3	Outfall018_20230121_Comp_F	Dissolved	Water	245.1	298285
MB 570-298285/1-B	Method Blank	Dissolved	Water	245.1	298285
LCS 570-298285/2-B	Lab Control Sample	Dissolved	Water	245.1	298285
LCSD 570-298285/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	298285
570-124873-A-3-E MS	Matrix Spike	Dissolved	Water	245.1	298285
570-124873-A-3-F MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	298285

Metals

Prep Batch: 298289

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	245.1	
MB 570-298289/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-298289/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-298289/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
570-124653-L-2-D MS	Matrix Spike	Dissolved	Water	245.1	
570-124653-L-2-E MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	

Filtration Batch: 298550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-3	Outfall018_20230121_Comp_F	Dissolved	Water	Filtration	
MB 570-298550/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-298550/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-298550/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 298596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-3	Outfall018_20230121_Comp_F	Dissolved	Water	200.8	298550

Analysis Batch: 298597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-298550/1-A	Method Blank	Dissolved	Water	200.8	298550
LCS 570-298550/2-A	Lab Control Sample	Dissolved	Water	200.8	298550
LCSD 570-298550/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	298550

Analysis Batch: 298644

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	245.1	298289
570-124898-3	Outfall018_20230121_Comp_F	Dissolved	Water	245.1	298287
MB 570-298285/1-B	Method Blank	Dissolved	Water	245.1	298287
MB 570-298289/1-A	Method Blank	Total/NA	Water	245.1	298289
LCS 570-298285/2-B	Lab Control Sample	Dissolved	Water	245.1	298287
LCS 570-298289/2-A	Lab Control Sample	Total/NA	Water	245.1	298289
LCSD 570-298285/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	298287
LCSD 570-298289/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	298289
570-124653-L-2-D MS	Matrix Spike	Dissolved	Water	245.1	298289
570-124653-L-2-E MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	298289
570-124873-A-3-E MS	Matrix Spike	Dissolved	Water	245.1	298287
570-124873-A-3-F MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	298287

General Chemistry

Analysis Batch: 297650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	SM 2130B	
LCSSRM 570-297650/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-297650/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-297650/3	Lab Control Sample	Total/NA	Water	SM 2130B	
570-124868-E-1 DU	Duplicate	Total/NA	Water	SM 2130B	

General Chemistry

Analysis Batch: 297651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	SM 5540C	297652
MB 570-297652/5-A	Method Blank	Total/NA	Water	SM 5540C	297652
LCS 570-297652/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	297652
LCSD 570-297652/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	297652
570-124873-A-1-A MS	Matrix Spike	Total/NA	Water	SM 5540C	297652
570-124873-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5540C	297652

Prep Batch: 297652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	SM 5540C	
MB 570-297652/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-297652/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-297652/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	
570-124873-A-1-A MS	Matrix Spike	Total/NA	Water	SM 5540C	
570-124873-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5540C	

Analysis Batch: 297946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	Kelada 01	
MB 570-297946/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-297946/14	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-297946/13	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-297946/10	Lab Control Sample	Total/NA	Water	Kelada 01	
570-124243-S-1 MS	Matrix Spike	Total/NA	Water	Kelada 01	
570-124243-S-1 MSD	Matrix Spike Duplicate	Total/NA	Water	Kelada 01	

Analysis Batch: 297947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	SM 2540D	
MB 570-297947/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-297947/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-297947/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
590-19662-B-1 DU	Duplicate	Total/NA	Water	SM 2540D	

Analysis Batch: 298283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-298283/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-298283/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-298283/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-125023-A-2 DU	Duplicate	Total/NA	Water	SM 2540D	

Analysis Batch: 298979

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	SM5210B	
USB 570-298979/2	Method Blank	Total/NA	Water	SM5210B	
LCS 570-298979/4	Lab Control Sample	Total/NA	Water	SM5210B	
570-124873-I-1 DU	Duplicate	Total/NA	Water	SM5210B	

Analysis Batch: 299271

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 299271 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-299271/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-299271/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-299271/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
570-124898-1 DU	Outfall018_20230121_Comp	Total/NA	Water	SM 2540C	

Prep Batch: 299646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	Distill/Ammonia	
MB 570-299646/5-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-299646/6-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-299646/7-A	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	
570-124924-X-1-A MS	Matrix Spike	Total/NA	Water	Distill/Ammonia	
570-124924-X-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 299684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	350.1	299646
MB 570-299646/5-A	Method Blank	Total/NA	Water	350.1	299646
LCS 570-299646/6-A	Lab Control Sample	Total/NA	Water	350.1	299646
LCSD 570-299646/7-A	Lab Control Sample Dup	Total/NA	Water	350.1	299646
570-124924-X-1-A MS	Matrix Spike	Total/NA	Water	350.1	299646
570-124924-X-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	299646

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Client Sample ID: Outfall018_20230121_Comp
Lab Sample ID: 570-124898-1

Date Collected: 01/21/23 09:25
Matrix: Water

Date Received: 01/21/23 11:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			1054.6 mL	2 mL	298062	01/24/23 08:32	OAJ3	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	300591	02/02/23 21:09	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Prep	608			1500 mL	1 mL	297984	01/23/23 18:56	USUL	EET CAL 4
Total/NA	Analysis	608.3		1	1 mL	1 mL	300360	02/02/23 01:35	N5Y3	EET CAL 4
	Instrument ID: GC52A									
Total/NA	Analysis	300.0		2	4 mL	4 mL	297671	01/23/23 23:41	PS	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	300.0		1	4 mL	4 mL	297605	01/21/23 13:15	PS	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	300.0		1	4 mL	4 mL	297606	01/21/23 13:15	PS	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	314.0		1	4 mL	4 mL	298791	01/27/23 06:33	PS	EET CAL 4
	Instrument ID: IC13									
Total/NA	Analysis	NO2NO3 Calc		1			298163	01/24/23 12:20	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total Recoverable	Prep	200.8			50 mL	50 mL	298096	01/24/23 09:53	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			298215	01/24/23 14:14	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Prep	245.1			25 mL	50 mL	298289	01/24/23 17:46	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			298644	01/25/23 16:02	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	299646	01/30/23 12:27	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	299684	01/30/23 14:37	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	297946	01/23/23 15:39	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			297650	01/21/23 15:06	ZVB7	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	299271	01/27/23 17:13	ZL7L	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	297947	01/23/23 16:51	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Prep	SM 5540C			100 mL	100 mL	297652	01/21/23 15:20	ZVB7	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	297651	01/21/23 16:47	ZVB7	EET CAL 4
	Instrument ID: UV9									
Total/NA	Analysis	SM5210B		1			298979	01/21/23 13:45	U7UR	EET CAL 4
	Instrument ID: BOD3									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Client Sample ID: Outfall018_20230121_Comp_F
Lab Sample ID: 570-124898-3

Date Collected: 01/21/23 09:25
Matrix: Water
Date Received: 01/21/23 11:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	298550	01/25/23 13:28	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			298596	01/25/23 14:44	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	298285	01/24/23 17:42	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	298287	01/24/23 18:15	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			298644	01/25/23 15:36	C0YH	EET CAL 4
	Instrument ID: HG8									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-1
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method	Method Description	Protocol	Laboratory
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
608.3	Organochlorine Pesticides in Water	40CFR136A	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
SM5210B	BOD, 5 Day	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
608	Liquid-Liquid Extraction (Separatory Funnel)	40CFR136A	EET CAL 4
625	Liquid-Liquid Extraction	40CFR136A	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Job ID: 570-124898-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124898-1	Outfall018_20230121_Comp	Water	01/21/23 09:25	01/21/23 11:40
570-124898-3	Outfall018_20230121_Comp_F	Water	01/21/23 09:25	01/21/23 11:40

124898

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002 011 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED															
									R	R	R	R	R	R	R	R	R	R	R	C		
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals. (E200.7): Zn (E200.8) Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl- SO_4, Nitrate-N Nitrite-N NO3+NO2-N Perchlorate (E300)	Turbidity TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals Mercury (E245.1)	Total Recoverable Metals (E200.7): Fe			Comments
Outfall 018	1 Outfall018_20230121_Comp	1/21/2023 1025	WM	500 mL Poly	1	HNO_3	90	No	X										X	X			Outfall 018 analyze for Fe.
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	1L Poly	1	None	115	No			X												
			WM	500 mL Poly	2	None	120	No				X											
			WM	500 mL Poly	2	None	130	No					X										48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X									48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X							
			WM	1 L Glass Amber	2	None	170	No									X						
			WM	1 L Glass Amber	2	None	180	No										X					
			WM	1L Poly	1	None	185	No							X								
	2 Outfall018_20230121_Comp_Extra	1/21/2023 1025	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	500 mL Poly	2	None	120	No				H											Hold
			WM	500 mL Poly	2	None	130	No					H										Hold
			WM	1 L Glass Amber	2	None	170	No									H						Hold
			WM	1 L Glass Amber	2	None	180	No										H					Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
STEPHEN SCHILLER	1-21-23/1140	HALEY ALDRICH	EC	1-21-23 11:40
Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: X
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: X

1.9/1.9 2.0/2.0 SC11

570-124898 Chain of Custody

2/14/2023

2019-2020 Rainy Season
Version 4

124898

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:	ANALYSIS REQUIRED
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001 002, 011, 018] Outfall 018 Comp	R R R R R C
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218		
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals. (E200.7) Zn (E200.8) Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0) Tritium (H-3) (E906.0) Sr-90 (E905.0) Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA	Total Dissolved Metals. Mercury (E245.1)	Total Dissolved Metals. (E200.7) Fe						Comments
Outfall 018	Outfall018_20230121_Comp_F	1/21/2023 0925	WM	1L Poly	1	None	200	No	X					X						Filter and preserve w/in 24hrs of receipt at lab. Outfall 018 analyze for Fe
			WM	borosilicate vials	1	None	320	No					X							Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230121_Comp	1/21/2023 0925	WM	500 mL Poly	1	NaOH	220	No		X										
			WM	2.5 Gal Cube	1	None	225	No			X									Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No												
			WM	~~1 Gal Cube~~	~~1~~	~~None~~	~~235~~	~~No~~												Only test if first or second rain events of the year Deliver to ABC Labs in Ventura, CA.

Legend. A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
STEPHEN SCHILLER	1-21-23/1140	HALEY ALDRICH	[signature] EC	1-21-23 11:40
Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal. _____

Sample Integrity: (Check)
Intact: _____ On Ice._____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV:___X_____

2/14/2023
2019-2020 Rainy Season
Version 4

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s)	COC No. 570-204878 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin. California	Page. Page 1 of 1
Company. TestAmerica Laboratories Inc.		Accreditations Required (See note). State Program - California		Job #: 570-124898-3
Address: 13715 Rider Trail North,	Due Date Requested 2/24/2023			
City. Earth City	TAT Requested (days)			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - Comp	Project #: 44024446			
Site.	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other.

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Evaporation Gross Alpha/Beta	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230121_Comp (570-124898-1)	1/21/23	09 25 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by.	Date.	Time:	Method of Shipment:

Relinquished by.	Date/Time:	Company	Received by.	Date/Time:	Company
[signature]	1/23/23 1350				
Relinquished by.	Date/Time:	Company	Received by.	Date/Time:	Company
Relinquished by.	Date/Time:	Company	Received by.	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver. 06/08/2021

2/14/2023

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204885 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-124898-2
Address: 880 Riverside Parkway,	Due Date Requested: 2/9/2023			
City: West Sacramento	TAT Requested (days)			
State, Zip: CA, 95605	PO #:			
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	WO #:			
Email:	Project #: 44024446			
Project Name: Boeing SSFL NPDES - Outfall 018 - Comp	SSOW#:			
Site.				

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall018_20230121_Comp (570-124898-1)	1/21/23	09.25 Pacific		Water			X		2	See QAS, Boeing_w/u to zero ug/L, Use Boeing glassware.
Outfall018_20230121_Comp_Extra (570-124898-2)	1/21/23	09:25 Pacific		Water				X	2	See QAS, Boeing_w/u to zero ug/L, Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 1/23/23 1412	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

2/14/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124898-1

Login Number: 124898
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/14/2023 3:59:23 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 018 - Comp

JOB NUMBER

570-124898-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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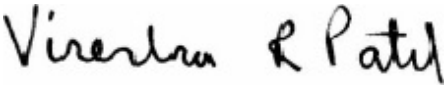
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-124898-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124898-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124898-2

Comments
No additional comments.

Receipt
The samples were received on 1/21/2023 11:40 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.9º C and 2.0º C.

Receipt Exceptions

The reference method requires samples to have a pH of 2. The following samples were received with a pH of 6. The samples were adjusted to the appropriate pH in the laboratory.

Job#: 570-124887 R-1
Job#: 570-124898 R-1
Job #: 570-124868 R-1
Job #: 570-124873 R-1
Job #: 570-124890 K-1
Job #: 570-124891 J-1

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: Outfall018_20230121_Comp (570-124898-1), (CCV 320-652668/2) and (MB 320-651919/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Job ID: 570-124898-2

Client Sample ID: Outfall018_20230121_Comp

Lab Sample ID: 570-124898-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	0.00000044	J,DX q	0.0000095	0.00000032	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	0.00000074	J,DX MB	0.000048	0.00000031	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.00000076	J,DX MB	0.000048	0.00000020	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.00000064	J,DX MB	0.000048	0.00000023	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000027	J,DX MB	0.000048	0.00000026	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000011	J,DX MB	0.000048	0.00000026	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000011	J,DX MB	0.000048	0.00000023	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.00000070	J,DX MB q	0.000048	0.00000018	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000056	J,DX MB q	0.000048	0.00000016	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000010	J,DX MB q	0.000048	0.00000018	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000074	J,DX MB q	0.000048	0.00000016	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000026	J,DX MB	0.000048	0.00000016	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000015	J,DX MB q	0.000048	0.00000022	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.00000082	J,DX MB q	0.000048	0.00000026	ug/L	1		1613B	Total/NA
OCDD	0.0000072	J,DX MB	0.000095	0.00000044	ug/L	1		1613B	Total/NA
OCDF	0.0000026	J,DX MB q	0.000095	0.00000035	ug/L	1		1613B	Total/NA
Total TCDD	0.00000044	J,DX q	0.0000095	0.00000032	ug/L	1		1613B	Total/NA
Total TCDF	0.00000026	J,DX MB q	0.0000095	0.00000018	ug/L	1		1613B	Total/NA
Total PeCDD	0.00000074	J,DX MB	0.000048	0.00000031	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000014	J,DX MB	0.000048	0.00000020	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000049	J,DX MB	0.000048	0.00000023	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000030	J,DX MB q	0.000048	0.00000016	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000046	J,DX MB	0.000048	0.00000016	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000023	J,DX MB q	0.000048	0.00000022	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: Outfall018_20230121_Comp
Date Collected: 01/21/23 09:25
Date Received: 01/21/23 11:40

Lab Sample ID: 570-124898-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.00000044	J,DX q	0.0000095	0.00000032	ug/L		02/06/23 05:11	02/08/23 16:40	1
1,2,3,7,8-PeCDD	0.00000074	J,DX MB	0.000048	0.00000031	ug/L		02/06/23 05:11	02/08/23 16:40	1
1,2,3,7,8-PeCDF	0.00000076	J,DX MB	0.000048	0.00000020	ug/L		02/06/23 05:11	02/08/23 16:40	1
2,3,4,7,8-PeCDF	0.00000064	J,DX MB	0.000048	0.00000023	ug/L		02/06/23 05:11	02/08/23 16:40	1
1,2,3,4,7,8-HxCDD	0.0000027	J,DX MB	0.000048	0.00000026	ug/L		02/06/23 05:11	02/08/23 16:40	1
1,2,3,6,7,8-HxCDD	0.0000011	J,DX MB	0.000048	0.00000026	ug/L		02/06/23 05:11	02/08/23 16:40	1
1,2,3,7,8,9-HxCDD	0.0000011	J,DX MB	0.000048	0.00000023	ug/L		02/06/23 05:11	02/08/23 16:40	1
1,2,3,4,7,8-HxCDF	0.00000070	J,DX MB q	0.000048	0.00000018	ug/L		02/06/23 05:11	02/08/23 16:40	1
1,2,3,6,7,8-HxCDF	0.00000056	J,DX MB q	0.000048	0.00000016	ug/L		02/06/23 05:11	02/08/23 16:40	1
1,2,3,7,8,9-HxCDF	0.0000010	J,DX MB q	0.000048	0.00000018	ug/L		02/06/23 05:11	02/08/23 16:40	1
2,3,4,6,7,8-HxCDF	0.00000074	J,DX MB q	0.000048	0.00000016	ug/L		02/06/23 05:11	02/08/23 16:40	1
1,2,3,4,6,7,8-HpCDD	0.0000026	J,DX MB	0.000048	0.00000016	ug/L		02/06/23 05:11	02/08/23 16:40	1
1,2,3,4,6,7,8-HpCDF	0.0000015	J,DX MB q	0.000048	0.00000022	ug/L		02/06/23 05:11	02/08/23 16:40	1
1,2,3,4,7,8,9-HpCDF	0.00000082	J,DX MB q	0.000048	0.00000026	ug/L		02/06/23 05:11	02/08/23 16:40	1
OCDD	0.0000072	J,DX MB	0.000095	0.00000044	ug/L		02/06/23 05:11	02/08/23 16:40	1
OCDF	0.0000026	J,DX MB q	0.000095	0.00000035	ug/L		02/06/23 05:11	02/08/23 16:40	1
Total TCDD	0.00000044	J,DX q	0.0000095	0.00000032	ug/L		02/06/23 05:11	02/08/23 16:40	1
Total TCDF	0.00000026	J,DX MB q	0.0000095	0.00000018	ug/L		02/06/23 05:11	02/08/23 16:40	1
Total PeCDD	0.00000074	J,DX MB	0.000048	0.00000031	ug/L		02/06/23 05:11	02/08/23 16:40	1
Total PeCDF	0.0000014	J,DX MB	0.000048	0.00000020	ug/L		02/06/23 05:11	02/08/23 16:40	1
Total HxCDD	0.0000049	J,DX MB	0.000048	0.00000023	ug/L		02/06/23 05:11	02/08/23 16:40	1
Total HxCDF	0.0000030	J,DX MB q	0.000048	0.00000016	ug/L		02/06/23 05:11	02/08/23 16:40	1
Total HpCDD	0.0000046	J,DX MB	0.000048	0.00000016	ug/L		02/06/23 05:11	02/08/23 16:40	1
Total HpCDF	0.0000023	J,DX MB q	0.000048	0.00000022	ug/L		02/06/23 05:11	02/08/23 16:40	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*74*		*25 - 164*	*02/06/23 05:11*	*02/08/23 16:40*	*1*
13C-2,3,7,8-TCDF	*71*		*24 - 169*	*02/06/23 05:11*	*02/08/23 16:40*	*1*
13C-1,2,3,7,8-PeCDD	*74*		*25 - 181*	*02/06/23 05:11*	*02/08/23 16:40*	*1*
13C-1,2,3,7,8-PeCDF	*76*		*24 - 185*	*02/06/23 05:11*	*02/08/23 16:40*	*1*
13C-2,3,4,7,8-PeCDF	*75*		*21 - 178*	*02/06/23 05:11*	*02/08/23 16:40*	*1*
13C-1,2,3,4,7,8-HxCDD	*75*		*32 - 141*	*02/06/23 05:11*	*02/08/23 16:40*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: Outfall018_20230121_Comp **Lab Sample ID: 570-124898-1**
Date Collected: 01/21/23 09:25 **Matrix: Water**
Date Received: 01/21/23 11:40

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,6,7,8-HxCDD	84		28 - 130	02/06/23 05:11	02/08/23 16:40	1
13C-1,2,3,4,7,8-HxCDF	71		26 - 152	02/06/23 05:11	02/08/23 16:40	1
13C-1,2,3,6,7,8-HxCDF	83		26 - 123	02/06/23 05:11	02/08/23 16:40	1
13C-1,2,3,7,8,9-HxCDF	81		29 - 147	02/06/23 05:11	02/08/23 16:40	1
13C-2,3,4,6,7,8-HxCDF	83		28 - 136	02/06/23 05:11	02/08/23 16:40	1
13C-1,2,3,4,6,7,8-HpCDD	73		23 - 140	02/06/23 05:11	02/08/23 16:40	1
13C-1,2,3,4,6,7,8-HpCDF	73		28 - 143	02/06/23 05:11	02/08/23 16:40	1
13C-1,2,3,4,7,8,9-HpCDF	76		26 - 138	02/06/23 05:11	02/08/23 16:40	1
13C-OCDD	74		17 - 157	02/06/23 05:11	02/08/23 16:40	1
13C-OCDF	72		17 - 157	02/06/23 05:11	02/08/23 16:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	86		35 - 197	02/06/23 05:11	02/08/23 16:40	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: Outfall018_20230121_Comp
Lab Sample ID: 570-124898-1
Date Collected: 01/21/23 09:25
Matrix: Water
Date Received: 01/21/23 11:40

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.0000095	0.00000045	ug/L		02/06/23 05:11	02/09/23 16:21	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*64*		*24 - 169*	*02/06/23 05:11*	*02/09/23 16:21*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*90*		*35 - 197*	*02/06/23 05:11*	*02/09/23 16:21*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Job ID: 570-124898-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**37TCDD (35-197)**
570-124898-1	Outfall018_20230121_Comp	86
570-124898-1 - RA	Outfall018_20230121_Comp	90
MB 320-651919/1-A	Method Blank	87
MB 320-651919/1-A - RA	Method Blank	90

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**37TCDD (31-191)**
LCS 320-651919/2-A	Lab Control Sample	85
LCSD 320-651919/3-A	Lab Control Sample Dup	89

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc. Job ID: 570-124898-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-124898-1	Outfall018_20230121_Comp	74	71	74	76	75	75	84	71
570-124898-1 - RA	Outfall018_20230121_Comp		64						
MB 320-651919/1-A	Method Blank	68	65	64	66	62	57	63	53
MB 320-651919/1-A - RA	Method Blank		55						

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-124898-1	Outfall018_20230121_Comp	83	81	83	73	73	76	74	72
570-124898-1 - RA	Outfall018_20230121_Comp								
MB 320-651919/1-A	Method Blank	62	74	72	65	57	67	66	64
MB 320-651919/1-A - RA	Method Blank								

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-651919/2-A	Lab Control Sample	69	67	63	65	57	51	60	47
LCSD 320-651919/3-A	Lab Control Sample Dup	74	72	72	75	67	58	66	50

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-651919/2-A	Lab Control Sample	57	77	73	67	54	71	72	69
LCSD 320-651919/3-A	Lab Control Sample Dup	62	82	78	74	60	79	84	81

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-651919/1-A
Matrix: Water
Analysis Batch: 652545

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651919

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000032	ug/L		02/06/23 05:11	02/08/23 14:21	1
2,3,7,8-TCDF	0.000000363	J,DX	0.000010	0.00000015	ug/L		02/06/23 05:11	02/08/23 14:21	1
1,2,3,7,8-PeCDD	0.000000447	J,DX	0.000050	0.00000027	ug/L		02/06/23 05:11	02/08/23 14:21	1
1,2,3,7,8-PeCDF	0.000000684	J,DX	0.000050	0.00000017	ug/L		02/06/23 05:11	02/08/23 14:21	1
2,3,4,7,8-PeCDF	0.000000486	J,DX	0.000050	0.00000021	ug/L		02/06/23 05:11	02/08/23 14:21	1
1,2,3,4,7,8-HxCDD	0.00000167	J,DX q	0.000050	0.00000026	ug/L		02/06/23 05:11	02/08/23 14:21	1
1,2,3,6,7,8-HxCDD	0.000000541	J,DX q	0.000050	0.00000025	ug/L		02/06/23 05:11	02/08/23 14:21	1
1,2,3,7,8,9-HxCDD	0.000000824	J,DX q	0.000050	0.00000023	ug/L		02/06/23 05:11	02/08/23 14:21	1
1,2,3,4,7,8-HxCDF	0.000000740	J,DX q	0.000050	0.00000019	ug/L		02/06/23 05:11	02/08/23 14:21	1
1,2,3,6,7,8-HxCDF	0.000000445	J,DX	0.000050	0.00000017	ug/L		02/06/23 05:11	02/08/23 14:21	1
1,2,3,7,8,9-HxCDF	0.000000716	J,DX	0.000050	0.00000016	ug/L		02/06/23 05:11	02/08/23 14:21	1
2,3,4,6,7,8-HxCDF	0.000000418	J,DX	0.000050	0.00000014	ug/L		02/06/23 05:11	02/08/23 14:21	1
1,2,3,4,6,7,8-HpCDD	0.00000131	J,DX q	0.000050	0.00000019	ug/L		02/06/23 05:11	02/08/23 14:21	1
1,2,3,4,6,7,8-HpCDF	0.00000171	J,DX	0.000050	0.00000022	ug/L		02/06/23 05:11	02/08/23 14:21	1
1,2,3,4,7,8,9-HpCDF	0.000000934	J,DX	0.000050	0.00000022	ug/L		02/06/23 05:11	02/08/23 14:21	1
OCDD	0.00000304	J,DX q	0.00010	0.00000029	ug/L		02/06/23 05:11	02/08/23 14:21	1
OCDF	0.00000225	J,DX	0.00010	0.00000021	ug/L		02/06/23 05:11	02/08/23 14:21	1
Total TCDD	ND		0.000010	0.00000032	ug/L		02/06/23 05:11	02/08/23 14:21	1
Total TCDF	0.000000589	J,DX q	0.000010	0.00000015	ug/L		02/06/23 05:11	02/08/23 14:21	1
Total PeCDD	0.000000876	J,DX q	0.000050	0.00000027	ug/L		02/06/23 05:11	02/08/23 14:21	1
Total PeCDF	0.00000117	J,DX	0.000050	0.00000017	ug/L		02/06/23 05:11	02/08/23 14:21	1
Total HxCDD	0.00000332	J,DX q	0.000050	0.00000023	ug/L		02/06/23 05:11	02/08/23 14:21	1
Total HxCDF	0.00000268	J,DX q	0.000050	0.00000014	ug/L		02/06/23 05:11	02/08/23 14:21	1
Total HpCDD	0.00000304	J,DX q	0.000050	0.00000019	ug/L		02/06/23 05:11	02/08/23 14:21	1
Total HpCDF	0.00000265	J,DX	0.000050	0.00000022	ug/L		02/06/23 05:11	02/08/23 14:21	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*68*		*25 - 164*	*02/06/23 05:11*	*02/08/23 14:21*	*1*
13C-2,3,7,8-TCDF	*65*		*24 - 169*	*02/06/23 05:11*	*02/08/23 14:21*	*1*
13C-1,2,3,7,8-PeCDD	*64*		*25 - 181*	*02/06/23 05:11*	*02/08/23 14:21*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-651919/1-A
Matrix: Water
Analysis Batch: 652545

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651919

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDF	66		24 - 185	02/06/23 05:11	02/08/23 14:21	1
13C-2,3,4,7,8-PeCDF	62		21 - 178	02/06/23 05:11	02/08/23 14:21	1
13C-1,2,3,4,7,8-HxCDD	57		32 - 141	02/06/23 05:11	02/08/23 14:21	1
13C-1,2,3,6,7,8-HxCDD	63		28 - 130	02/06/23 05:11	02/08/23 14:21	1
13C-1,2,3,4,7,8-HxCDF	53		26 - 152	02/06/23 05:11	02/08/23 14:21	1
13C-1,2,3,6,7,8-HxCDF	62		26 - 123	02/06/23 05:11	02/08/23 14:21	1
13C-1,2,3,7,8,9-HxCDF	74		29 - 147	02/06/23 05:11	02/08/23 14:21	1
13C-2,3,4,6,7,8-HxCDF	72		28 - 136	02/06/23 05:11	02/08/23 14:21	1
13C-1,2,3,4,6,7,8-HpCDD	65		23 - 140	02/06/23 05:11	02/08/23 14:21	1
13C-1,2,3,4,6,7,8-HpCDF	57		28 - 143	02/06/23 05:11	02/08/23 14:21	1
13C-1,2,3,4,7,8,9-HpCDF	67		26 - 138	02/06/23 05:11	02/08/23 14:21	1
13C-OCDD	66		17 - 157	02/06/23 05:11	02/08/23 14:21	1
13C-OCDF	64		17 - 157	02/06/23 05:11	02/08/23 14:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	87		35 - 197	02/06/23 05:11	02/08/23 14:21	1

Lab Sample ID: LCS 320-651919/2-A
Matrix: Water
Analysis Batch: 652545

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 651919

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000216		ug/L		108	67 - 158		
2,3,7,8-TCDF			0.000200	0.000235	MB	ug/L		118	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.00102	MB	ug/L		102	70 - 142		
1,2,3,7,8-PeCDF			0.00100	0.00105	MB	ug/L		105	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.00105	MB	ug/L		105	68 - 160		
1,2,3,4,7,8-HxCDD			0.00100	0.00101	MB	ug/L		101	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.00106	MB	ug/L		106	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.00136	MB	ug/L		136	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.00104	MB	ug/L		104	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.00106	MB	ug/L		106	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.00104	MB	ug/L		104	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.00105	MB	ug/L		105	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.00106	MB	ug/L		106	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.00108	MB	ug/L		108	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.00106	MB	ug/L		106	78 - 138		
OCDD			0.00200	0.00209	MB	ug/L		105	78 - 144		
OCDF			0.00200	0.00223	MB	ug/L		112	63 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	69		20 - 175
13C-2,3,7,8-TCDF	67		22 - 152
13C-1,2,3,7,8-PeCDD	63		21 - 227
13C-1,2,3,7,8-PeCDF	65		21 - 192
13C-2,3,4,7,8-PeCDF	57		13 - 328
13C-1,2,3,4,7,8-HxCDD	51		21 - 193
13C-1,2,3,6,7,8-HxCDD	60		25 - 163

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-651919/2-A
Matrix: Water
Analysis Batch: 652545

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 651919

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCDF	47		19 - 202
13C-1,2,3,6,7,8-HxCDF	57		21 - 159
13C-1,2,3,7,8,9-HxCDF	77		17 - 205
13C-2,3,4,6,7,8-HxCDF	73		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	67		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	54		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	71		20 - 186
13C-OCDD	72		13 - 199
13C-OCDF	69		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	85		31 - 191

Lab Sample ID: LCSD 320-651919/3-A
Matrix: Water
Analysis Batch: 652545

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 651919

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000214		ug/L		107	67 - 158	1	50
2,3,7,8-TCDF			0.000200	0.000231	MB	ug/L		115	75 - 158	2	50
1,2,3,7,8-PeCDD			0.00100	0.00104	MB	ug/L		104	70 - 142	2	50
1,2,3,7,8-PeCDF			0.00100	0.00103	MB	ug/L		103	80 - 134	2	50
2,3,4,7,8-PeCDF			0.00100	0.00105	MB	ug/L		105	68 - 160	0	50
1,2,3,4,7,8-HxCDD			0.00100	0.00105	MB	ug/L		105	70 - 164	3	50
1,2,3,6,7,8-HxCDD			0.00100	0.00104	MB	ug/L		104	76 - 134	2	50
1,2,3,7,8,9-HxCDD			0.00100	0.00128	MB	ug/L		128	64 - 162	6	50
1,2,3,4,7,8-HxCDF			0.00100	0.00107	MB	ug/L		107	72 - 134	3	50
1,2,3,6,7,8-HxCDF			0.00100	0.00105	MB	ug/L		105	84 - 130	1	50
1,2,3,7,8,9-HxCDF			0.00100	0.00105	MB	ug/L		105	78 - 130	1	50
2,3,4,6,7,8-HxCDF			0.00100	0.00104	MB	ug/L		104	70 - 156	1	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.00106	MB	ug/L		106	70 - 140	0	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00107	MB	ug/L		107	82 - 122	1	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.00107	MB	ug/L		107	78 - 138	0	50
OCDD			0.00200	0.00207	MB	ug/L		103	78 - 144	1	50
OCDF			0.00200	0.00220	MB	ug/L		110	63 - 170	1	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	74		20 - 175
13C-2,3,7,8-TCDF	72		22 - 152
13C-1,2,3,7,8-PeCDD	72		21 - 227
13C-1,2,3,7,8-PeCDF	75		21 - 192
13C-2,3,4,7,8-PeCDF	67		13 - 328
13C-1,2,3,4,7,8-HxCDD	58		21 - 193
13C-1,2,3,6,7,8-HxCDD	66		25 - 163
13C-1,2,3,4,7,8-HxCDF	50		19 - 202
13C-1,2,3,6,7,8-HxCDF	62		21 - 159
13C-1,2,3,7,8,9-HxCDF	82		17 - 205
13C-2,3,4,6,7,8-HxCDF	78		22 - 176

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-651919/3-A
Matrix: Water
Analysis Batch: 652545

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 651919

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDD	74		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	60		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	79		20 - 186
13C-OCDD	84		13 - 199
13C-OCDF	81		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	89		31 - 191

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Lab Sample ID: MB 320-651919/1-A
Matrix: Water
Analysis Batch: 652668

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651919

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF - RA	ND		0.000010	0.00000057	ug/L		02/06/23 05:11	02/09/23 15:44	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF - RA	55		24 - 169	02/06/23 05:11	02/09/23 15:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD - RA	90		35 - 197	02/06/23 05:11	02/09/23 15:44	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Specialty Organics

Prep Batch: 651919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1 - RA	Outfall018_20230121_Comp	Total/NA	Water	1613B	
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	1613B	
MB 320-651919/1-A - RA	Method Blank	Total/NA	Water	1613B	
MB 320-651919/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-651919/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-651919/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 652545

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	1613B	651919
MB 320-651919/1-A	Method Blank	Total/NA	Water	1613B	651919
LCS 320-651919/2-A	Lab Control Sample	Total/NA	Water	1613B	651919
LCSD 320-651919/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	651919

Analysis Batch: 652668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1 - RA	Outfall018_20230121_Comp	Total/NA	Water	1613B	651919
MB 320-651919/1-A - RA	Method Blank	Total/NA	Water	1613B	651919

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Client Sample ID: Outfall018_20230121_Comp
Lab Sample ID: 570-124898-1
Date Collected: 01/21/23 09:25
Matrix: Water
Date Received: 01/21/23 11:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		1050.3 mL	20.0 uL	651919	02/06/23 05:11	FC	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	652668	02/09/23 16:21	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			1050.3 mL	20.0 uL	651919	02/06/23 05:11	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	652545	02/08/23 16:40	GRB	EET SAC
	Instrument ID: 12D5									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23 *
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-2
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124898-1	Outfall018_20230121_Comp	Water	01/21/23 09:25	01/21/23 11:40

124898

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002 011 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED															
									R	R	R	R	R	R	R	R	R	R	R	C		
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals. (E200.7): Zn (E200.8) Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl- SO_4, Nitrate-N Nitrite-N NO3+NO2-N Perchlorate (E300)	Turbidity TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals Mercury (E245.1)	Total Recoverable Metals (E200.7): Fe			Comments
Outfall 018	1 Outfall018_20230121_Comp	1/21/2023 1025	WM	500 mL Poly	1	HNO_3	90	No	X										X	X			Outfall 018 analyze for Fe.
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	1L Poly	1	None	115	No			X												
			WM	500 mL Poly	2	None	120	No				X											
			WM	500 mL Poly	2	None	130	No					X										48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X									48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X							
			WM	1 L Glass Amber	2	None	170	No									X						
			WM	1 L Glass Amber	2	None	180	No										X					
			WM	1L Poly	1	None	185	No							X								
	2 Outfall018_20230121_Comp_Extra	1/21/2023 1025	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	500 mL Poly	2	None	120	No				H											Hold
			WM	500 mL Poly	2	None	130	No					H										Hold
			WM	1 L Glass Amber	2	None	170	No									H						Hold
			WM	1 L Glass Amber	2	None	180	No										H					Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
STEPHEN SCHILLER	1-21-23/1140	HALEY ALDRICH	EC	1-21-23 11:40

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: __X__

1.9/1.9 2.0/2.0 SC11

570-124898 Chain of Custody

2/14/2023

2019-2020 Rainy Season
Version 4

124898

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:	ANALYSIS REQUIRED
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001 002, 011, 018] Outfall 018 Comp	R R R R R C
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218		
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals. (E200.7) Zn (E200.8) Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0) Tritium (H-3) (E906.0) Sr-90 (E905.0) Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA	Total Dissolved Metals. Mercury (E245.1)	Total Dissolved Metals. (E200.7) Fe						Comments
Outfall 018	Outfall018_20230121_Comp_F	1/21/2023 0925	WM	1L Poly	1	None	200	No	X					X						Filter and preserve w/in 24hrs of receipt at lab. Outfall 018 analyze for Fe
			WM	borosilicate vials	1	None	320	No					X							Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230121_Comp	1/21/2023 0925	WM	500 mL Poly	1	NaOH	220	No		X										
			WM	2.5 Gal Cube	1	None	225	No			X									Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No												
			WM	~~1 Gal Cube~~	~~1~~	~~None~~	~~235~~	~~No~~												Only test if first or second rain events of the year Deliver to ABC Labs in Ventura, CA.

Legend. A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
STEPHEN SCHILLER	1-21-23/1140	HALEY ALDRICH	EC	1-21-23 11:40
Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal. _____

Sample Integrity: (Check)
Intact: _____ On Ice._____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV:___X_____

2/14/2023
2019-2020 Rainy Season
Version 4

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s)	COC No. 570-204878 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin. California	Page. Page 1 of 1
Company. TestAmerica Laboratories Inc.		Accreditations Required (See note). State Program - California		Job #: 570-124898-3
Address: 13715 Rider Trail North,	Due Date Requested 2/24/2023			
City. Earth City	TAT Requested (days)			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - Comp	Project #: 44024446			
Site.	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other.

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Evaporation Gross Alpha/Beta	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230121_Comp (570-124898-1)	1/21/23	09 25 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by.	Date.	Time:	Method of Shipment:

Relinquished by.	Date/Time:	Company	Received by.	Date/Time:	Company
	1/23/23 1350				
Relinquished by.	Date/Time:	Company	Received by.	Date/Time:	Company
Relinquished by.	Date/Time:	Company	Received by.	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver. 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204885 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-124898-2
Address: 880 Riverside Parkway,	Due Date Requested: 2/9/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605	PO #:			
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	WO #:			
Email:	Project #: 44024446			
Project Name: Boeing SSFL NPDES - Outfall 018 - Comp	SSOW#:			
Site.				

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall018_20230121_Comp (570-124898-1)	1/21/23	09.25 Pacific		Water			X		2	See QAS, Boeing_w/u to zero ug/L, Use Boeing glassware.
Outfall018_20230121_Comp_Extra (570-124898-2)	1/21/23	09:25 Pacific		Water				X	2	See QAS, Boeing_w/u to zero ug/L, Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 1/23/23 1412	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204885.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-124898-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 2/9/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - Comp	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
Preservation Code:										
Outfall018_20230121_Comp (570-124898-1)	1/21/23	09:25 Pacific		Water			X		2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.
Outfall018_20230121_Comp_Extra (570-124898-2)	1/21/23	09:25 Pacific		Water				X	2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/23/23 1412			1/24/23 940	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 1.8C

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124898-2

Login Number: 124898
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124898-2

Login Number: 124898
List Number: 3
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 01/24/23 11:32 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.8c 1.6c 2.0c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/23/2023 1:55:20 PM

JOB DESCRIPTION

Boeing SSFL NPDES - Outfall 018 - Comp

JOB NUMBER

570-124898-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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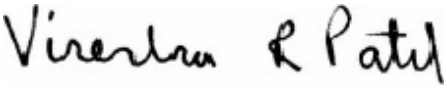
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Qualifiers

Rad

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124898-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124898-3

Comments
No additional comments.

Receipt
The samples were received on 1/21/2023 11:40 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.9º C and 2.0º C.

Receipt Exceptions

The reference method requires samples to have a pH of 2. The following samples were received with a pH of 6. The samples were adjusted to the appropriate pH in the laboratory.

Job#: 570-124887 R-1
Job#: 570-124898 R-1
Job #: 570-124868 R-1
Job #: 570-124873 R-1
Job #: 570-124890 K-1
Job #: 570-124891 J-1

RAD
Method 900.0: Gross Alpha and Gross Beta batch 598963
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230121_Comp (570-124898-1), (LCS 160-598963/2-A), (LCSB 160-598963/3-A), (MB 160-598963/1-A), (570-124887-R-1-G), (570-124887-R-1-J DU), (570-124887-R-1-H MS) and (570-124887-R-1-I MSBT)

Method 900.0: Gross Alpha Beta prep batch 160-598963:

The matrix spike (MS) recoveries for preparation batch 160-598963 and analytical batch 160-600333 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.(570-124887-R-1-H MS)

Method 901.1: Gamma Prep Batch 160-598560
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232

Job ID: 570-124898-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Outfall018_20230121_Comp (570-124898-1), (570-124868-R-1-E) and (570-124868-R-1-F DU)

Methods 903.0, 9315: Radium-226 prep batch 160-598272:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall018_20230121_Comp (570-124898-1), (LCS 160-598272/2-A), (LCSD 160-598272/3-A) and (MB 160-598272/1-A)

Methods 904.0, 9320: Radium-228 batch 598275
The LCS/LCSD recovered at (LCS 131% / LCSD 129%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCS 160-598275/2-A) and (LCSD 160-598275/3-A)

Methods 904.0, 9320: Gamma prep batch 160-598275:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall018_20230121_Comp (570-124898-1), (LCS 160-598275/2-A), (LCSD 160-598275/3-A) and (MB 160-598275/1-A)

Method 905: Strontium-90 prep batch 160-598546:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall018_20230121_Comp (570-124898-1)

Methods 900.0, 905: Gross Alpha Beta prep batch 160-598892:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. (LCS 160-598546/2-A), (LCSD 160-598546/3-A) and (MB 160-598546/1-A)

Method 906.0: Tritium 598717
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall018_20230121_Comp (570-124898-1), (LCS 160-598717/2-A), (MB 160-598717/1-A), (570-124392-Q-1-A), (570-124392-Q-1-B DU), (570-124868-Q-1-A) and (570-124868-Q-1-B MS)

Job ID: 570-124898-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method A-01-R: Isotopic Uranium batch 598317
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230121_Comp (570-124898-1), (LCS 160-598317/2-A), (MB 160-598317/1-A) and (570-124898-R-1-D DU)

Method PrecSep_0: Radium-228 Prep Batch 160-598275

Insufficient sample volume was available to perform a sample duplicate for the following samples: Outfall018_20230121_Comp (570-124898-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-21: Radium-226 Prep Batch 160-598272

Insufficient sample volume was available to perform a sample duplicate for the following samples: Outfall018_20230121_Comp (570-124898-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 160-598546

Insufficient sample volume was available to perform a sample duplicate for the following samples: Outfall018_20230121_Comp (570-124898-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Client Sample ID: Outfall018_20230121_Comp
Lab Sample ID: 570-124898-1

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: Outfall018_20230121_Comp
Date Collected: 01/21/23 09:25
Date Received: 01/21/23 11:40

Lab Sample ID: 570-124898-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.000	U	1.18	1.18	3.00	2.25	pCi/L	02/02/23 12:38	02/14/23 20:02	1
Gross Beta	**1.97**		0.699	0.726	4.00	0.949	pCi/L	02/02/23 12:38	02/14/23 20:02	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: Outfall018_20230121_Comp
Date Collected: 01/21/23 09:25
Date Received: 01/21/23 11:40

Lab Sample ID: 570-124898-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-2.57	U	8.11	8.11	20.0	9.39	pCi/L	01/27/23 16:27	02/22/23 16:19	1
Potassium-40	22.7	U	87.0	87.0		89.2	pCi/L	01/27/23 16:27	02/22/23 16:19	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: Outfall018_20230121_Comp
Date Collected: 01/21/23 09:25
Date Received: 01/21/23 11:40

Lab Sample ID: 570-124898-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0213	U	0.0517	0.0517	1.00	0.0954	pCi/L	01/26/23 09:36	02/21/23 17:55	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.4*		*30 - 110*	*01/26/23 09:36*	*02/21/23 17:55*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: Outfall018_20230121_Comp
Date Collected: 01/21/23 09:25
Date Received: 01/21/23 11:40

Lab Sample ID: 570-124898-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.146	U	0.263	0.263	1.00	0.458	pCi/L	01/26/23 09:50	02/01/23 12:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.4*		*30 - 110*	*01/26/23 09:50*	*02/01/23 12:13*	*1*
Y Carrier	*84.5*		*30 - 110*	*01/26/23 09:50*	*02/01/23 12:13*	*1*

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: Outfall018_20230121_Comp **Lab Sample ID: 570-124898-1**
Date Collected: 01/21/23 09:25 **Matrix: Water**
Date Received: 01/21/23 11:40

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	**0.395**		0.250	0.252	3.00	0.384	pCi/L	01/27/23 12:54	02/08/23 16:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*79.9*		*30 - 110*	*01/27/23 12:54*	*02/08/23 16:03*	*1*
Y Carrier	*80.7*		*30 - 110*	*01/27/23 12:54*	*02/08/23 16:03*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: Outfall018_20230121_Comp
Lab Sample ID: 570-124898-1
Date Collected: 01/21/23 09:25
Matrix: Water
Date Received: 01/21/23 11:40

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-78.4	U	144	144	500	277	pCi/L	01/31/23 12:11	02/02/23 03:56	1

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: Outfall018_20230121_Comp
Date Collected: 01/21/23 09:25
Date Received: 01/21/23 11:40

Lab Sample ID: 570-124898-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.0800	U	0.09331	0.09358	1.00	0.126	pCi/L	01/26/23 16:02	02/13/23 14:02	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Job ID: 570-124898-3

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-124898-1	Outfall018_20230121_Comp	81.4
LCS 160-598272/2-A	Lab Control Sample	101
LCSD 160-598272/3-A	Lab Control Sample Dup	105
MB 160-598272/1-A	Method Blank	96.9

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-124898-1	Outfall018_20230121_Comp	81.4	84.5
LCS 160-598275/2-A	Lab Control Sample	101	85.6
LCSD 160-598275/3-A	Lab Control Sample Dup	105	86.4
MB 160-598275/1-A	Method Blank	96.9	85.6

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-124898-1	Outfall018_20230121_Comp	79.9	80.7
LCS 160-598546/2-A	Lab Control Sample	85.4	87.5
LCSD 160-598546/3-A	Lab Control Sample Dup	88.3	86.4
MB 160-598546/1-A	Method Blank	87.1	87.1

Tracer/Carrier Legend

Sr = Sr Carrier

Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-124898-1 DU	Outfall018_20230121_Comp	83.0
LCS 160-598317/2-A	Lab Control Sample	82.4
MB 160-598317/1-A	Method Blank	86.3

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-598963/1-A
Matrix: Water
Analysis Batch: 600139

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598963

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.09917	U	0.402	0.402	3.00	0.768	pCi/L	02/02/23 12:38	02/13/23 20:06	1
Gross Beta	-0.06316	U	0.387	0.387	4.00	0.721	pCi/L	02/02/23 12:38	02/13/23 20:06	1

Lab Sample ID: LCS 160-598963/2-A
Matrix: Water
Analysis Batch: 600139

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598963

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	47.32		7.04	3.00	1.92	pCi/L	94	75 - 125

Lab Sample ID: LCSB 160-598963/3-A
Matrix: Water
Analysis Batch: 600139

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598963

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.7	69.87		7.52	4.00	0.802	pCi/L	95	75 - 125

Lab Sample ID: 570-124887-R-1-H MS
Matrix: Water
Analysis Batch: 600333

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598963

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	0.648	U	50.5	21.15	F1	4.07	3.00	2.28	pCi/L	41	60 - 140

Lab Sample ID: 570-124887-R-1-I MSBT
Matrix: Water
Analysis Batch: 600333

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598963

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	1.93		73.7	72.66		7.82	4.00	0.963	pCi/L	96	60 - 140

Lab Sample ID: 570-124887-R-1-J DU
Matrix: Water
Analysis Batch: 600334

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 598963

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	0.648	U	0.1221	U	0.967	3.00	1.85	pCi/L	0.22	1
Gross Beta	1.93		1.198		0.572	4.00	0.785	pCi/L	0.57	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-598560/1-A
Matrix: Water
Analysis Batch: 601380

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598560

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.540	U	4.68	4.69	20.0	5.50	pCi/L	01/27/23 16:27	02/22/23 04:55	1
Potassium-40	29.54	U	87.5	87.6		89.2	pCi/L	01/27/23 16:27	02/22/23 04:55	1

Lab Sample ID: LCS 160-598560/2-A
Matrix: Water
Analysis Batch: 601377

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598560

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	145200		17300		291	pCi/L	107	75 - 125
Cesium-137	40900	41940		5000	20.0	80.3	pCi/L	102	75 - 125
Cobalt-60	18000	18820		2240		41.1	pCi/L	104	75 - 125

Lab Sample ID: 570-124868-R-1-F DU
Matrix: Water
Analysis Batch: 601377

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 598560

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	-1.28	U	-4.041	U	9.43	20.0	11.3	pCi/L	0.16	1
Potassium-40	35.2	U	-70.31	U	114		149	pCi/L	0.59	1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-598272/1-A
Matrix: Water
Analysis Batch: 601085

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598272

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.02830	U	0.0410	0.0411	1.00	0.0968	pCi/L	01/26/23 09:36	02/21/23 17:54	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.9*		*30 - 110*	*01/26/23 09:36*	*02/21/23 17:54*	*1*

Lab Sample ID: LCS 160-598272/2-A
Matrix: Water
Analysis Batch: 601085

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598272

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	10.88		1.10	1.00	0.0974	pCi/L	96	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*101*		*30 - 110*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-598272/3-A
Matrix: Water
Analysis Batch: 601085

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 598272

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	10.61		1.07	1.00	0.0992	pCi/L	94	75 - 125	0.13	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*105*		*30 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-598275/1-A
Matrix: Water
Analysis Batch: 598871

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598275

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.06539	U	0.232	0.232	1.00	0.461	pCi/L	01/26/23 09:50	02/01/23 12:04	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.9*		*30 - 110*	*01/26/23 09:50*	*02/01/23 12:04*	*1*
Y Carrier	*85.6*		*30 - 110*	*01/26/23 09:50*	*02/01/23 12:04*	*1*

Lab Sample ID: LCS 160-598275/2-A
Matrix: Water
Analysis Batch: 598871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598275

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.23	10.75		1.38	1.00	0.513	pCi/L	131	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*101*		*30 - 110*
Y Carrier	*85.6*		*30 - 110*

Lab Sample ID: LCSD 160-598275/3-A
Matrix: Water
Analysis Batch: 598871

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 598275

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.23	10.62		1.34	1.00	0.390	pCi/L	129	75 - 125	0.05	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*105*		*30 - 110*
Y Carrier	*86.4*		*30 - 110*

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-598546/1-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598546

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.1970	U	0.181	0.182	3.00	0.291	pCi/L	01/27/23 12:54	02/08/23 15:57	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*87.1*		*30 - 110*	*01/27/23 12:54*	*02/08/23 15:57*	*1*
Y Carrier	*87.1*		*30 - 110*	*01/27/23 12:54*	*02/08/23 15:57*	*1*

Lab Sample ID: LCS 160-598546/2-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598546

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.37	7.382		0.816	3.00	0.271	pCi/L	100	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*85.4*		*30 - 110*
Y Carrier	*87.5*		*30 - 110*

Lab Sample ID: LCSD 160-598546/3-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 598546

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.37	7.433		0.819	3.00	0.316	pCi/L	101	75 - 125	0.03	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*88.3*		*30 - 110*
Y Carrier	*86.4*		*30 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-598717/1-A
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598717

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-27.93	U	147	147	500	270	pCi/L	01/31/23 12:11	02/01/23 21:31	1

Lab Sample ID: LCS 160-598717/2-A
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598717

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2110	1839		333	500	270	pCi/L	87	75 - 125		

Method: 906.0 - Tritium, Total (LSC) (Continued)

Lab Sample ID: 570-124868-Q-1-B MS
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598717

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Tritium	123	U	2160	2177		373	500	286	pCi/L	95	60 - 140

Lab Sample ID: 570-124392-Q-1-B DU
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 598717

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Tritium	0.901	U	2.703	U	159	500	289	pCi/L	0.01	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-598317/1-A
Matrix: Water
Analysis Batch: 600238

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598317

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.1240		0.1019	0.1021	1.00	0.124	pCi/L	01/26/23 16:02	02/13/23 13:57	1

Lab Sample ID: LCS 160-598317/2-A
Matrix: Water
Analysis Batch: 600239

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598317

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Uranium-234	12.7	13.54		1.51	1.00	0.165	pCi/L	106	75 - 125
Uranium-238	13.0	14.49		1.59	1.00	0.112	pCi/L	111	75 - 125

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*82.4*		*30 - 110*

Lab Sample ID: 570-124898-1 DU
Matrix: Water
Analysis Batch: 600216

Client Sample ID: Outfall018_20230121_Comp
Prep Type: Total/NA
Prep Batch: 598317

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Total Uranium	0.0800	U	0.1269	U	0.138	1.00	0.198	pCi/L	0.20	1

Rad

Prep Batch: 598272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	PrecSep-21	
MB 160-598272/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-598272/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-598272/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 598275

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	PrecSep_0	
MB 160-598275/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-598275/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-598275/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 598317

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	ExtChrom	
MB 160-598317/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-598317/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-124898-1 DU	Outfall018_20230121_Comp	Total/NA	Water	ExtChrom	

Prep Batch: 598546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	PrecSep-7	
MB 160-598546/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-598546/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-598546/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 598560

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	Fill_Geo-0	
MB 160-598560/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-598560/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-124868-R-1-F DU	Duplicate	Total/NA	Water	Fill_Geo-0	

Prep Batch: 598717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	LSC_Dist_Susp	
MB 160-598717/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-598717/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
570-124868-Q-1-B MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
570-124392-Q-1-B DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 598963

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124898-1	Outfall018_20230121_Comp	Total/NA	Water	Evaporation	
MB 160-598963/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-598963/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-598963/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-124887-R-1-H MS	Matrix Spike	Total/NA	Water	Evaporation	
570-124887-R-1-I MSBT	Matrix Spike	Total/NA	Water	Evaporation	
570-124887-R-1-J DU	Duplicate	Total/NA	Water	Evaporation	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Client Sample ID: Outfall018_20230121_Comp
Lab Sample ID: 570-124898-1
Date Collected: 01/21/23 09:25
Matrix: Water
Date Received: 01/21/23 11:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Evaporation			200.01 mL	1.0 g	598963	02/02/23 12:38	MST	EET SL
Total/NA	Analysis	900.0		1			600333	02/14/23 20:02	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 mL	598560	01/27/23 16:27	SAC	EET SL
Total/NA	Analysis	901.1		1			601380	02/22/23 16:19	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	PrecSep-21			1007.47 mL	1.0 g	598272	01/26/23 09:36	DJP	EET SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	601085	02/21/23 17:55	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			1007.47 mL	1.0 g	598275	01/26/23 09:50	DJP	EET SL
Total/NA	Analysis	904.0		1			598874	02/01/23 12:13	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep-7			1003.63 mL	1.0 g	598546	01/27/23 12:54	DJP	EET SL
Total/NA	Analysis	905		1			599672	02/08/23 16:03	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	LSC_Dist_Susp			101.10 mL	1.0 g	598717	01/31/23 12:11	SEH	EET SL
Total/NA	Analysis	906.0		1			599486	02/02/23 03:56	REV	EET SL
	Instrument ID: LSCAQUA									
Total/NA	Prep	ExtChrom			505.59 mL	1.0 mL	598317	01/26/23 16:02	MAL	EET SL
Total/NA	Analysis	A-01-R		1			600258	02/13/23 14:02	FLC	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124898-3
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES - Outfall 018 - Comp

Job ID: 570-124898-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124898-1	Outfall018_20230121_Comp	Water	01/21/23 09:25	01/21/23 11:40

124898

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002 011 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED															
									R	R	R	R	R	R	R	R	R	R	R	C		
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals. (E200.7): Zn (E200.8) Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl- SO_4, Nitrate-N Nitrite-N NO3+NO2-N Perchlorate (E300)	Turbidity TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals Mercury (E245.1)	Total Recoverable Metals (E200.7): Fe			Comments
Outfall 018	1 Outfall018_20230121_Comp	1/21/2023 1025	WM	500 mL Poly	1	HNO_3	90	No	X										X	X			Outfall 018 analyze for Fe.
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	1L Poly	1	None	115	No			X												
			WM	500 mL Poly	2	None	120	No				X											
			WM	500 mL Poly	2	None	130	No					X										48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X									48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X							
			WM	1 L Glass Amber	2	None	170	No									X						
			WM	1 L Glass Amber	2	None	180	No										X					
			WM	1L Poly	1	None	185	No							X								
	2 Outfall018_20230121_Comp_Extra	1/21/2023 1025	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	500 mL Poly	2	None	120	No				H											Hold
			WM	500 mL Poly	2	None	130	No					H										Hold
			WM	1 L Glass Amber	2	None	170	No									H						Hold
			WM	1 L Glass Amber	2	None	180	No										H					Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
STEPHEN SCHILLER	1-21-23/1140	HALEY ALDRICH	EC	1-21-23 11:40
Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: X
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: X

1.9/1.9 2.0/2.0 SC11

570-124898 Chain of Custody

2/23/2023

2019-2020 Rainy Season
Version 4

124898

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:	ANALYSIS REQUIRED
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001 002, 011, 018] Outfall 018 Comp	
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218		
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	

R R R R R C

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals. (E200.7) Zn (E200.8) Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0) Tritium (H-3) (E906.0) Sr-90 (E905.0) Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	Chronic Toxicity Selenastrum (EPA-821-R-02-013) ABC Labs in Ventura, CA	Total Dissolved Metals. Mercury (E245.1)	Total Dissolved Metals. (E200.7) Fe						Comments
Outfall 018	Outfall018_20230121_Comp_F	1/21/2023 0925	WM	1L Poly	1	None	200	No	X				X						Filter and preserve w/in 24hrs of receipt at lab. Outfall 018 analyze for Fe
			WM	borosilicate vials	1	None	320	No					X						Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230121_Comp	1/21/2023 0925	WM	500 mL Poly	1	NaOH	220	No		X									
			WM	2.5 Gal Cube	1	None	225	No			X								Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No											
			WM	~~1 Gal Cube~~	~~1~~	~~None~~	~~235~~	~~No~~											Only test if first or second rain events of the year Deliver to ABC Labs in Ventura, CA.

Legend. A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
STEPHEN SCHILLER	1-21-23/1140	HALEY ALDRICH	EC	1-21-23 11:40
Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal. _____

Sample Integrity: (Check)
Intact: _____ On Ice._____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV:___X_____

2/23/2023

2019-2020 Rainy Season
Version 4

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s)	COC No. 570-204878 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin. California	Page. Page 1 of 1
Company. TestAmerica Laboratories Inc.		Accreditations Required (See note). State Program - California		Job #: 570-124898-3
Address: 13715 Rider Trail North,	Due Date Requested 2/24/2023			
City. Earth City	TAT Requested (days)			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - Comp	Project #: 44024446			
Site.	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W pH 4-5
Y - Trizma
Z - other (specify)
Other.

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Evaporation Gross Alpha/Beta	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230121_Comp (570-124898-1)	1/21/23	09 25 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by.	Date.	Time:	Method of Shipment:

Relinquished by.	Date/Time:	Company	Received by.	Date/Time:	Company
	1/23/23 1350				
Relinquished by.	Date/Time:	Company	Received by.	Date/Time:	Company
Relinquished by.	Date/Time:	Company	Received by.	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver. 06/08/2021

2/23/2023

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204885 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-124898-2
Address: 880 Riverside Parkway,	Due Date Requested: 2/9/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605	PO #:			
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	WO #:			
Email:	Project #: 44024446			
Project Name: Boeing SSFL NPDES - Outfall 018 - Comp	SSOW#:			
Site.				

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	1613B/1613B_Sox_Sep_P Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall018_20230121_Comp (570-124898-1)	1/21/23	09.25 Pacific		Water			X		2	See QAS, Boeing_w/u to zero ug/L, Use Boeing glassware.
Outfall018_20230121_Comp_Extra (570-124898-2)	1/21/23	09:25 Pacific		Water				X	2	See QAS, Boeing_w/u to zero ug/L, Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 1/23/23 1412	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204878.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-124898-3
Address: 13715 Rider Trail North,	Due Date Requested: 2/24/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL NPDES - Outfall 018 - Comp	Project #: 44024446			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Evaporation Gross Alpha/Beta	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230121_Comp (570-124898-1)	1/21/23	09:25 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature] FEDEX	1/23/23 1350		FEDEX		
2	Relinquished by:	Date/Time:	Company	Received by: Bayana Sharkey - Hazardous	Date/Time: 1/24/23 8:50 AM	Company ETASL
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124898-3

Login Number: 124898
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124898-3

Login Number: 124898
List Number: 2
Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis
List Creation: 01/24/23 11:44 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/12/2023 10:06:42 AM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall 018 - Grab

JOB NUMBER

570-128843-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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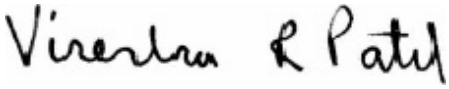
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-128843-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grat

Qualifiers

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc. Job ID: 570-128843-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grab

Job ID: 570-128843-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-128843-1

Comments
No additional comments.

Receipt
The samples were received on 2/24/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.1º C.

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-307104. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 624.1: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: Outfall018_20230224_Grab (570-128843-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-128843-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grab

Client Sample ID: Outfall018_20230224_Grab
Lab Sample ID: 570-128843-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
HEM (Oil & Grease)	0.62	J,DX	1.0	0.53	mg/L	1		1664A	Total/NA
Specific Conductance	720		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA

Client Sample ID: TB-20230224
Lab Sample ID: 570-128843-3

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: Outfall018_20230224_Grab **Lab Sample ID: 570-128843-1**
Date Collected: 02/24/23 07:00 **Matrix: Water**
Date Received: 02/24/23 18:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		1.0	0.67	ug/L			02/25/23 18:35	2
1,2-Dichloroethane	ND		1.0	0.30	ug/L			02/25/23 18:35	2
Trichloroethene	ND		1.0	0.35	ug/L			02/25/23 18:35	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*60 - 140*		*02/25/23 18:35*	*2*
Toluene-d8 (Surr)	*101*		*60 - 140*		*02/25/23 18:35*	*2*

Client Sample ID: TB-20230224 **Lab Sample ID: 570-128843-3**
Date Collected: 02/24/23 07:00 **Matrix: Water**
Date Received: 02/24/23 18:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			02/25/23 17:05	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			02/25/23 17:05	1
Trichloroethene	ND		0.50	0.17	ug/L			02/25/23 17:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*60 - 140*		*02/25/23 17:05*	*1*
Toluene-d8 (Surr)	*98*		*60 - 140*		*02/25/23 17:05*	*1*

General Chemistry

Client Sample ID: Outfall018_20230224_Grab **Lab Sample ID: 570-128843-1**
Date Collected: 02/24/23 07:00 **Matrix: Water**
Date Received: 02/24/23 18:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	**0.62**	**J,DX**	1.0	0.53	mg/L		02/28/23 09:30	02/28/23 15:26	1
Specific Conductance (SM 2510B)	**720**		1.0	1.0	umhos/cm			03/09/23 22:52	1
Settleable Solids (SM 2540F)	ND		0.10	0.10	mL/L			02/24/23 22:34	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grab

Job ID: 570-128843-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		BFB	TOL								
Lab Sample ID	Client Sample ID	(60-140)	(60-140)								
570-128843-1	Outfall018_20230224_Grab	95	101								
570-128843-3	TB-20230224	95	98								
LCS 570-307104/1003	Lab Control Sample	99	101								
LCSD 570-307104/4	Lab Control Sample Dup	98	99								
MB 570-307104/6	Method Blank	96	99								

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-307104/6
Matrix: Water
Analysis Batch: 307104

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			02/25/23 16:43	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			02/25/23 16:43	1
Trichloroethene	ND		0.50	0.17	ug/L			02/25/23 16:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*60 - 140*		*02/25/23 16:43*	*1*
Toluene-d8 (Surr)	*99*		*60 - 140*		*02/25/23 16:43*	*1*

Lab Sample ID: LCS 570-307104/1003
Matrix: Water
Analysis Batch: 307104

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1-Dichloroethene			10.0	10.5		ug/L		105	50 - 150		
1,2-Dichloroethane			10.0	9.61		ug/L		96	70 - 130		
Trichloroethene			10.0	10.9		ug/L		109	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*60 - 140*
Toluene-d8 (Surr)	*101*		*60 - 140*

Lab Sample ID: LCSD 570-307104/4
Matrix: Water
Analysis Batch: 307104

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene			10.0	10.7		ug/L		107	50 - 150	2	32
1,2-Dichloroethane			10.0	9.78		ug/L		98	70 - 130	2	49
Trichloroethene			10.0	11.1		ug/L		111	65 - 135	1	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*
Toluene-d8 (Surr)	*99*		*60 - 140*

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-307465/1-A
Matrix: Water
Analysis Batch: 307764

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 307465

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		1.0	0.51	mg/L		02/28/23 09:30	02/28/23 15:26	1

Method: 1664A - HEM and SGT-HEM (Continued)

Lab Sample ID: LCS 570-307465/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 307764 **Prep Batch: 307465**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
HEM (Oil & Grease)			40.0	37.9		mg/L		95	78 - 114		

Lab Sample ID: LCSD 570-307465/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 307764 **Prep Batch: 307465**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM (Oil & Grease)			40.0	36.8		mg/L		92	78 - 114	3	18

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-310457/46 **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 310457

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/09/23 22:33	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-128843-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grab

GC/MS VOA

Analysis Batch: 307104

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-128843-1	Outfall018_20230224_Grab	Total/NA	Water	624.1	
570-128843-3	TB-20230224	Total/NA	Water	624.1	
MB 570-307104/6	Method Blank	Total/NA	Water	624.1	
LCS 570-307104/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-307104/4	Lab Control Sample Dup	Total/NA	Water	624.1	

General Chemistry

Analysis Batch: 306809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-128843-1	Outfall018_20230224_Grab	Total/NA	Water	SM 2540F	

Prep Batch: 307465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-128843-1	Outfall018_20230224_Grab	Total/NA	Water	1664A	
MB 570-307465/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-307465/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-307465/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 307764

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-128843-1	Outfall018_20230224_Grab	Total/NA	Water	1664A	307465
MB 570-307465/1-A	Method Blank	Total/NA	Water	1664A	307465
LCS 570-307465/2-A	Lab Control Sample	Total/NA	Water	1664A	307465
LCSD 570-307465/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	307465

Analysis Batch: 310457

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-128843-1	Outfall018_20230224_Grab	Total/NA	Water	SM 2510B	
MB 570-310457/46	Method Blank	Total/NA	Water	SM 2510B	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-128843-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grab

Client Sample ID: Outfall018_20230224_Grab
Lab Sample ID: 570-128843-1
Date Collected: 02/24/23 07:00
Matrix: Water
Date Received: 02/24/23 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		2	10 mL	10 mL	307104	02/25/23 18:35	N1A	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Prep	1664A			970 mL	1000 mL	307465	02/28/23 09:30	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			307764	02/28/23 15:26	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									
Total/NA	Analysis	SM 2510B		1			310457	03/09/23 22:52	BDH9	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	306809	02/24/23 22:34	GG0B	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB-20230224
Lab Sample ID: 570-128843-3
Date Collected: 02/24/23 07:00
Matrix: Water
Date Received: 02/24/23 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	307104	02/25/23 17:05	N1A	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 570-128843-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grat

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-128843-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grab

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4

Protocol References:

1664A = EPA-821-98-002

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grab

Job ID: 570-128843-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-128843-1	Outfall018_20230224_Grab	Water	02/24/23 07:00	02/24/23 18:00
570-128843-3	TB-20230224	Water	02/24/23 07:00	02/24/23 18:00

128843

Page 1 of 1

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-128843 Chain of Custody

EDBPSOUX

Client Name/Address.	Project:
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Grab
Eurofins Calscience Irvine Contact: Christian Bondoc 17461 Derian Ave Suite #100 Irvine CA 92614 Tel 949-260-3218 ECI 57013187	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R Oil & Grease (E1664A-HEM)	R VOCs - only 1,1-DCE, 1,2-DCA, TCE (E624)	R Settleable Solids (E160.5 (SM2540F))	R Conductivity (SM2510B / E120.1)	Comments
1 Outfall 018	Outfall018_20230224_Grab	2/24/2023 0700	WM	1 L Glass Amber	1	HCl	15	No	X				
			WM	40 mL VOA	3	HCl	30	No		X			
			WM	1L Poly	1	None	70	No			X		
			WM	500 mL Poly	1	None	75	No				X	
2	Outfall018_20230224_Grab_Extra	2/24/2023 0700	WM	1 L Glass Amber	1	HCl	15	No	H				Hold
			WM	40 mL VOA	3	HCl	30	No		H			Hold
			WM	500 mL Poly	1	None	75	No				H	Hold
Trip Blanks	TB-20230224	2/24/2023 0800	WQ	40 mL VOA	3	HCl	30	No		X			

Field Readings: (Include units)

Time of Readings: 0700

DO 28.35 mg/L

pH 7.30 pH unit

Temp 45.2 °C/°F

Field readings QC Checked by: [signature]

Date/Time: 2-24-2023/0725

Meter serial #

Legend: R=Routine

Relinquished By	Date/Time:	Company	Received By	Date/Time:
[signature]	2-24-2023/1205		[signature] EC	2/24/23 1205
[signature] EC	2/24/23 1800		[signature] EC	2-24-23 18:00
Relinquished By	Date/Time:	Company	Received By	Date/Time:

Turn-around time (Check)

24 Hour _____ 72 Hour _____ 10 Day ___X___

48 Hour _____ 5 Day _____ Normal _____

Sample Integrity (Check)

Intact: _____ On Ice: _____

Store samples for 6 months.

Data Requirements: (Check)

No Level IV: _____ All Level IV: ___X___

~~1.4/1.3 1.5/1.3~~ 2.1/2.0 ~~1.7/1.6~~ 1.2/1.1 SC12

ACO 2-24-23

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3/12/2023

2019-2020 Rainy Season

Version 4

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-128843-1

Login Number: 128843
List Number: 1
Creator: Patel, Jayesh

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/12/2023 10:34:01 AM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall 018 - Comp

JOB NUMBER

570-129084-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

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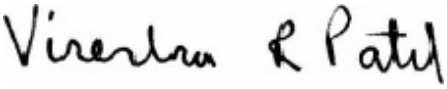
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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3/12/2023 10:34:01 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
LQ	LCS/LCSD recovery above method control limits

HPLC/IC

Qualifier	Qualifier Description
EY	Result exceeds normal dynamic range; reported as a min. est.
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129084-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129084-1

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.2º C and 2.6º C.

GC/MS Semi VOA
Method 625.1 SIM: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 570-307149 and analytical batch 570-307279 recovered outside control limits for the following analytes: 2,4-Dinitrotoluene, 4,6-Dinitro-2-methylphenol, Di-n-octyl phthalate and Di-n-butyl phthalate. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
Method 300.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 570-307135 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Sulfate in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

Method 300.0: Dilutions were performed for the following samples due to sample matrix properties: Outfall018_20230226_Comp (570-129084-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 200.8: The method blank for preparation batch 570-307908 and analytical batch 570-308055 contained Iron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 200.8: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-308039 and analytical batch 570-308099 were outside control limits for Zinc. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: Outfall018_20230226_Comp_F (570-129084-3). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: Outfall018_20230226_Comp_F (570-129084-3). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Job ID: 570-129084-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

Organic Prep

Method 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-308323.The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. 608LL

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-1

Client Sample ID: Outfall018_20230226_Comp — Lab Sample ID: 570-129084-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	11		2.0	0.72	mg/L	2		300.0	Total/NA
Nitrate as N	0.11	J,DX	0.20	0.039	mg/L	2		300.0	Total/NA
Sulfate	180		2.0	0.47	mg/L	2		300.0	Total/NA
Nitrate Nitrite as N	0.11		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Copper	1.7	J,DX	2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	0.18	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Zinc	3.0	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Turbidity	4.4		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Dissolved Solids	430		10	8.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	5.0		1.0	0.83	mg/L	1		SM 2540D	Total/NA
MBAS	0.059	J,DX	0.20	0.050	mg/L	1		SM 5540C	Total/NA
Biochemical Oxygen Demand	1.0	J,DX	2.0	1.0	mg/L	1		SM5210B	Total/NA

Client Sample ID: Outfall018_20230226_Comp_F — Lab Sample ID: 570-129084-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	1.7	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Zinc	3.2	J,DX BU	20	2.8	ug/L	1		200.8	Dissolved

This Detection Summary does not include radiochemical test results.

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: Outfall018_20230226_Comp
Lab Sample ID: 570-129084-1
Date Collected: 02/26/23 07:55
Matrix: Water
Date Received: 02/27/23 18:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		0.95	0.13	ug/L		02/28/23 05:19	02/28/23 18:18	1
2,4-Dinitrotoluene	ND	LQ	0.19	0.11	ug/L		02/28/23 05:19	02/28/23 18:18	1
Bis(2-ethylhexyl) phthalate	ND		4.8	3.4	ug/L		02/28/23 05:19	02/28/23 18:18	1
N-Nitrosodimethylamine	ND		0.19	0.18	ug/L		02/28/23 05:19	02/28/23 18:18	1
Pentachlorophenol	ND		0.95	0.81	ug/L		02/28/23 05:19	02/28/23 18:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*70*		*31 - 120*	*02/28/23 05:19*	*02/28/23 18:18*	*1*
Phenol-d6 (Surr)	*31*		*10 - 120*	*02/28/23 05:19*	*02/28/23 18:18*	*1*
p-Terphenyl-d14 (Surr)	*69*		*45 - 120*	*02/28/23 05:19*	*02/28/23 18:18*	*1*
2,4,6-Tribromophenol	*89*		*28 - 127*	*02/28/23 05:19*	*02/28/23 18:18*	*1*
2-Fluorophenol	*45*		*17 - 120*	*02/28/23 05:19*	*02/28/23 18:18*	*1*
Nitrobenzene-d5	*80*		*27 - 120*	*02/28/23 05:19*	*02/28/23 18:18*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-1

Method: EPA 608.3 - Organochlorine Pesticides in Water

Client Sample ID: Outfall018_20230226_Comp
Date Collected: 02/26/23 07:55
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129084-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		03/02/23 08:41	03/09/23 17:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*39*		*20 - 139*	*03/02/23 08:41*	*03/09/23 17:05*	*1*
DCB Decachlorobiphenyl (Surr)	*38*		*20 - 154*	*03/02/23 08:41*	*03/09/23 17:05*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-1

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: Outfall018_20230226_Comp
Date Collected: 02/26/23 07:55
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129084-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**11**		2.0	0.72	mg/L			02/28/23 01:35	2
Nitrite as N	ND		0.20	0.086	mg/L			02/28/23 01:35	2
Nitrate as N	**0.11**	**J,DX**	0.20	0.039	mg/L			02/28/23 01:35	2
Sulfate	**180**		2.0	0.47	mg/L			02/28/23 01:35	2

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-1

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: Outfall018_20230226_Comp
Date Collected: 02/26/23 07:55
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129084-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/01/23 00:19	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-1

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: Outfall018_20230226_Comp
Date Collected: 02/26/23 07:55
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129084-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	0.11		0.10	0.020	mg/L			03/03/23 14:06	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: Outfall018_20230226_Comp
Date Collected: 02/26/23 07:55
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129084-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		03/01/23 06:30	03/01/23 11:05	1
Copper	**1.7**	**J,DX**	2.0	0.32	ug/L		03/01/23 06:30	03/01/23 11:05	1
Lead	**0.18**	**J,DX**	1.0	0.12	ug/L		03/01/23 06:30	03/01/23 11:05	1
Selenium	ND		2.0	0.52	ug/L		03/01/23 06:30	03/01/23 11:05	1
Zinc	**3.0**	**J,DX**	20	2.8	ug/L		03/01/23 06:30	03/01/23 11:05	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: Outfall018_20230226_Comp_F
Date Collected: 02/26/23 07:55
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129084-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			03/01/23 14:25	1
Copper	**1.7**	**J,DX BU**	2.0	0.32	ug/L			03/01/23 14:25	1
Lead	ND	BU	1.0	0.12	ug/L			03/01/23 14:25	1
Selenium	ND	BU	2.0	0.52	ug/L			03/01/23 14:25	1
Zinc	**3.2**	**J,DX BU**	20	2.8	ug/L			03/01/23 14:25	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-1

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: Outfall018_20230226_Comp
Date Collected: 02/26/23 07:55
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129084-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/03/23 09:45	03/03/23 13:40	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-1

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: Outfall018_20230226_Comp_F
Date Collected: 02/26/23 07:55
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129084-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	BU	0.20	0.12	ug/L		03/03/23 09:45	03/03/23 12:17	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-1

General Chemistry

Client Sample ID: Outfall018_20230226_Comp
Date Collected: 02/26/23 07:55
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129084-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	ND		0.075	0.032	mg/L		03/08/23 09:40	03/08/23 11:58	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			03/03/23 20:26	1
Turbidity (SM 2130B)	**4.4**		0.05	0.05	NTU			02/27/23 23:03	1
Total Dissolved Solids (SM 2540C)	**430**		10	8.7	mg/L			03/02/23 16:27	1
Total Suspended Solids (SM 2540D)	**5.0**		1.0	0.83	mg/L			03/03/23 18:43	1
MBAS (SM 5540C)	**0.059**	**J,DX**	0.20	0.050	mg/L		02/27/23 20:28	02/27/23 21:57	1
Biochemical Oxygen Demand (SM5210B)	**1.0**	**J,DX**	2.0	1.0	mg/L			02/27/23 20:28	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	PHL6	TPHd14	TBP	2FP	NBZ
Lab Sample ID	Client Sample ID	(31-120)	(10-120)	(45-120)	(28-127)	(17-120)	(27-120)
570-129084-1	Outfall018_20230226_Comp	70	31	69	89	45	80
LCS 570-307149/2-A	Lab Control Sample	84	34	106	107	48	76
LCSD 570-307149/3-A	Lab Control Sample Dup	69	31	86	95	44	66
MB 570-307149/1-A	Method Blank	60	29	78	81	42	68

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX2	DCB1
Lab Sample ID	Client Sample ID	(20-139)	(20-154)
570-129084-1	Outfall018_20230226_Comp	39	38

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-307149/1-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 307149

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		02/27/23 05:32	02/27/23 17:25	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		02/27/23 05:32	02/27/23 17:25	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		02/27/23 05:32	02/27/23 17:25	1
Pentachlorophenol	ND		1.0	0.84	ug/L		02/27/23 05:32	02/27/23 17:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*60*		*31 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
Phenol-d6 (Surr)	*29*		*10 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
p-Terphenyl-d14 (Surr)	*78*		*45 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
2,4,6-Tribromophenol	*81*		*28 - 127*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
2-Fluorophenol	*42*		*17 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
Nitrobenzene-d5	*68*		*27 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*

Lab Sample ID: LCS 570-307149/2-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 307149

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4,6-Trichlorophenol	20.0	21.3		ug/L		107	52 - 129
2,4-Dinitrotoluene	20.0	25.8	LQ	ug/L		129	48 - 127
Bis(2-ethylhexyl) phthalate	20.0	25.7		ug/L		128	29 - 137
N-Nitrosodimethylamine	20.0	9.35		ug/L		47	20 - 120
Pentachlorophenol	20.0	14.9		ug/L		74	38 - 152

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*84*		*31 - 120*
Phenol-d6 (Surr)	*34*		*10 - 120*
p-Terphenyl-d14 (Surr)	*106*		*45 - 120*
2,4,6-Tribromophenol	*107*		*28 - 127*
2-Fluorophenol	*48*		*17 - 120*
Nitrobenzene-d5	*76*		*27 - 120*

Lab Sample ID: LCSD 570-307149/3-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 307149

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4,6-Trichlorophenol	20.0	17.5		ug/L		88	52 - 129	20	35
2,4-Dinitrotoluene	20.0	21.5		ug/L		107	48 - 127	18	25
Bis(2-ethylhexyl) phthalate	20.0	22.7		ug/L		114	29 - 137	12	50
N-Nitrosodimethylamine	20.0	9.77		ug/L		49	20 - 120	4	21
Pentachlorophenol	20.0	12.6		ug/L		63	38 - 152	16	52

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*69*		*31 - 120*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-307149/3-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 307149

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Phenol-d6 (Surr)	*31*		*10 - 120*
p-Terphenyl-d14 (Surr)	*86*		*45 - 120*
2,4,6-Tribromophenol	*95*		*28 - 127*
2-Fluorophenol	*44*		*17 - 120*
Nitrobenzene-d5	*66*		*27 - 120*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-307134/6
Matrix: Water
Analysis Batch: 307134

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			02/27/23 06:29	1
Nitrate as N	ND		0.10	0.020	mg/L			02/27/23 06:29	1

Lab Sample ID: LCS 570-307134/7
Matrix: Water
Analysis Batch: 307134

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrite as N			2.50	2.55		mg/L		102	90 - 110		
Nitrate as N			5.00	4.98		mg/L		100	90 - 110		

Lab Sample ID: LCSD 570-307134/8
Matrix: Water
Analysis Batch: 307134

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N			2.50	2.51		mg/L		100	90 - 110	1	15
Nitrate as N			5.00	4.91		mg/L		98	90 - 110	1	15

Lab Sample ID: 570-129084-1 MS
Matrix: Water
Analysis Batch: 307134

Client Sample ID: Outfall018_20230226_Comp
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrite as N	ND		2.50	2.58		mg/L		103	80 - 120		
Nitrate as N	0.11	J,DX	5.00	4.90		mg/L		96	80 - 120		

Lab Sample ID: 570-129084-1 MSD
Matrix: Water
Analysis Batch: 307134

Client Sample ID: Outfall018_20230226_Comp
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	ND		2.50	2.57		mg/L		103	80 - 120	0	20
Nitrate as N	0.11	J,DX	5.00	4.95		mg/L		97	80 - 120	1	20

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 570-307135/6
Matrix: Water
Analysis Batch: 307135

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			02/27/23 06:29	1
Sulfate	ND		1.0	0.24	mg/L			02/27/23 06:29	1

Lab Sample ID: LCS 570-307135/7
Matrix: Water
Analysis Batch: 307135

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	49.6		mg/L		99	90 - 110
Sulfate	50.0	49.1		mg/L		98	90 - 110

Lab Sample ID: LCSD 570-307135/8
Matrix: Water
Analysis Batch: 307135

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	48.7		mg/L		97	90 - 110	2	15
Sulfate	50.0	48.3		mg/L		97	90 - 110	2	15

Lab Sample ID: 570-129084-1 MS
Matrix: Water
Analysis Batch: 307135

Client Sample ID: Outfall018_20230226_Comp
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	11		50.0	56.1		mg/L		91	80 - 120
Sulfate	180		50.0	227	EY	mg/L		102	80 - 120

Lab Sample ID: 570-129084-1 MSD
Matrix: Water
Analysis Batch: 307135

Client Sample ID: Outfall018_20230226_Comp
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	11		50.0	56.6		mg/L		92	80 - 120	1	20
Sulfate	180		50.0	229	EY	mg/L		106	80 - 120	1	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-307808/7
Matrix: Water
Analysis Batch: 307808

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			02/28/23 19:27	1

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: LCS 570-307808/8
Matrix: Water
Analysis Batch: 307808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	24.2		ug/L		97	85 - 115

Lab Sample ID: LCSD 570-307808/9
Matrix: Water
Analysis Batch: 307808

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	24.1		ug/L		96	85 - 115	0	15

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-307908/1-A
Matrix: Water
Analysis Batch: 308055

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 307908

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		03/01/23 06:30	03/01/23 10:48	1
Copper	ND		2.0	0.32	ug/L		03/01/23 06:30	03/01/23 10:48	1
Lead	ND		1.0	0.12	ug/L		03/01/23 06:30	03/01/23 10:48	1
Selenium	ND		2.0	0.52	ug/L		03/01/23 06:30	03/01/23 10:48	1
Zinc	ND		20	2.8	ug/L		03/01/23 06:30	03/01/23 10:48	1

Lab Sample ID: LCS 570-307908/2-A
Matrix: Water
Analysis Batch: 308055

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 307908

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	77.6		ug/L		97	85 - 115
Copper	80.0	75.9		ug/L		95	85 - 115
Lead	80.0	76.9		ug/L		96	85 - 115
Selenium	80.0	77.6		ug/L		97	85 - 115
Zinc	80.0	76.6		ug/L		96	85 - 115

Lab Sample ID: LCSD 570-307908/3-A
Matrix: Water
Analysis Batch: 308055

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 307908

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	77.0		ug/L		96	85 - 115	1	20
Copper	80.0	76.3		ug/L		95	85 - 115	1	20
Lead	80.0	78.0		ug/L		97	85 - 115	1	20
Selenium	80.0	74.8		ug/L		93	85 - 115	4	20
Zinc	80.0	77.1		ug/L		96	85 - 115	1	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-308039/1-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L			03/01/23 14:16	1
Copper	ND		2.0	0.32	ug/L			03/01/23 14:16	1
Lead	ND		1.0	0.12	ug/L			03/01/23 14:16	1
Selenium	ND		2.0	0.52	ug/L			03/01/23 14:16	1
Zinc	ND		20	2.8	ug/L			03/01/23 14:16	1

Lab Sample ID: LCS 570-308039/2-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cadmium			80.0	80.0		ug/L		100	85 - 115		
Copper			80.0	77.6		ug/L		97	85 - 115		
Lead			80.0	80.3		ug/L		100	85 - 115		
Selenium			80.0	82.2		ug/L		103	85 - 115		
Zinc			80.0	78.5		ug/L		98	85 - 115		

Lab Sample ID: LCSD 570-308039/3-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium			80.0	80.5		ug/L		101	85 - 115	1	20
Copper			80.0	78.2		ug/L		98	85 - 115	1	20
Lead			80.0	80.5		ug/L		101	85 - 115	0	20
Selenium			80.0	83.1		ug/L		104	85 - 115	1	20
Zinc			80.0	81.1		ug/L		101	85 - 115	3	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-308521/1-A
Matrix: Water
Analysis Batch: 308860

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 308521

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/03/23 09:45	03/03/23 13:30	1

Lab Sample ID: LCS 570-308521/2-A
Matrix: Water
Analysis Batch: 308860

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 308521

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			8.00	8.47		ug/L		106	85 - 115		

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: LCSD 570-308521/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 308860
Prep Batch: 308521

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			8.00	8.54		ug/L		107	85 - 115	1	10

Lab Sample ID: 570-129084-1 MS
Client Sample ID: Outfall018_20230226_Comp
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 308860
Prep Batch: 308521

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	ND		8.00	8.02		ug/L		100	85 - 115		

Lab Sample ID: 570-129084-1 MSD
Client Sample ID: Outfall018_20230226_Comp
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 308860
Prep Batch: 308521

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		8.00	8.38		ug/L		105	85 - 115	4	10

Lab Sample ID: MB 570-308522/1-B
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 308860
Prep Batch: 308527

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/03/23 09:45	03/03/23 12:07	1

Lab Sample ID: LCS 570-308522/2-B
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 308860
Prep Batch: 308527

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			8.00	8.18		ug/L		102	85 - 115		

Lab Sample ID: LCSD 570-308522/3-B
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 308860
Prep Batch: 308527

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			8.00	8.00		ug/L		100	85 - 115	2	10

Lab Sample ID: 570-129084-3 MS
Client Sample ID: Outfall018_20230226_Comp_F
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 308860
Prep Batch: 308527

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	ND	BU	8.00	8.53		ug/L		107	85 - 115		

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: 570-129084-3 MSD
Matrix: Water
Analysis Batch: 308860

Client Sample ID: Outfall018_20230226_Comp_F
Prep Type: Dissolved
Prep Batch: 308527

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND	BU	8.00	8.39		ug/L		105	85 - 115	2	10

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-309909/5-A
Matrix: Water
Analysis Batch: 309958

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 309909

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		03/08/23 09:40	03/08/23 11:21	1

Lab Sample ID: LCS 570-309909/6-A
Matrix: Water
Analysis Batch: 309958

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 309909

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	0.500	0.483		mg/L		97	90 - 110

Lab Sample ID: LCSD 570-309909/7-A
Matrix: Water
Analysis Batch: 309958

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 309909

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	0.500	0.488		mg/L		98	90 - 110	1	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-309199/12
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			03/03/23 20:26	1

Lab Sample ID: LCS 570-309199/13
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	229		ug/L		92	90 - 110

Lab Sample ID: LCSD 570-309199/15
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	250	231		ug/L		92	90 - 110	1	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate (Continued)

Lab Sample ID: MRL 570-309199/11
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	5.41		ug/L		108	50 - 150

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-307521/3
Matrix: Water
Analysis Batch: 307521

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-308515/1
Matrix: Water
Analysis Batch: 308515

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			03/02/23 16:27	1

Lab Sample ID: LCS 570-308515/2
Matrix: Water
Analysis Batch: 308515

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	978		mg/L		98	84 - 108

Lab Sample ID: LCSD 570-308515/3
Matrix: Water
Analysis Batch: 308515

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1020		mg/L		102	84 - 108	4	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-308912/1
Matrix: Water
Analysis Batch: 308912

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			03/03/23 18:43	1

Lab Sample ID: LCS 570-308912/2
Matrix: Water
Analysis Batch: 308912

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	96.0		mg/L		96	77 - 116

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: LCSD 570-308912/3
Matrix: Water
Analysis Batch: 308912

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	96.0		mg/L		96	77 - 116	0	10

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-307522/5-A
Matrix: Water
Analysis Batch: 307520

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 307522

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.20	0.050	mg/L		02/27/23 20:28	02/27/23 21:49	1

Lab Sample ID: LCS 570-307522/6-A
Matrix: Water
Analysis Batch: 307520

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 307522

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
MBAS			0.500	0.546		mg/L		109	83 - 122		

Lab Sample ID: LCSD 570-307522/7-A
Matrix: Water
Analysis Batch: 307520

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 307522

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS			0.500	0.538		mg/L		108	83 - 122	1	10

Lab Sample ID: 570-129084-1 MS
Matrix: Water
Analysis Batch: 307520

Client Sample ID: Outfall018_20230226_Comp
Prep Type: Total/NA
Prep Batch: 307522

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
MBAS	0.059	J,DX	0.500	0.572		mg/L		103	64 - 141		

Lab Sample ID: 570-129084-1 MSD
Matrix: Water
Analysis Batch: 307520

Client Sample ID: Outfall018_20230226_Comp
Prep Type: Total/NA
Prep Batch: 307522

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS	0.059	J,DX	0.500	0.600		mg/L		108	64 - 141	5	10

Method: SM5210B - BOD, 5 Day

Lab Sample ID: USB 570-309219/2
Matrix: Water
Analysis Batch: 309219

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L			02/27/23 11:01	1

Method: SM5210B - BOD, 5 Day (Continued)

Lab Sample ID: LCS 570-309219/4
Matrix: Water
Analysis Batch: 309219

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Biochemical Oxygen Demand			199	201		mg/L		101	84.6 - 115.4		

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-1

GC/MS Semi VOA

Prep Batch: 307149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	625	
MB 570-307149/1-A	Method Blank	Total/NA	Water	625	
LCS 570-307149/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-307149/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 307279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-307149/1-A	Method Blank	Total/NA	Water	625.1 SIM	307149
LCS 570-307149/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	307149
LCSD 570-307149/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	307149

Analysis Batch: 307608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	625.1 SIM	307149

GC Semi VOA

Prep Batch: 308323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	608	

Analysis Batch: 310111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	608.3	308323

HPLC/IC

Analysis Batch: 307134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	300.0	
MB 570-307134/6	Method Blank	Total/NA	Water	300.0	
LCS 570-307134/7	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-307134/8	Lab Control Sample Dup	Total/NA	Water	300.0	
570-129084-1 MS	Outfall018_20230226_Comp	Total/NA	Water	300.0	
570-129084-1 MSD	Outfall018_20230226_Comp	Total/NA	Water	300.0	

Analysis Batch: 307135

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	300.0	
MB 570-307135/6	Method Blank	Total/NA	Water	300.0	
LCS 570-307135/7	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-307135/8	Lab Control Sample Dup	Total/NA	Water	300.0	
570-129084-1 MS	Outfall018_20230226_Comp	Total/NA	Water	300.0	
570-129084-1 MSD	Outfall018_20230226_Comp	Total/NA	Water	300.0	

Analysis Batch: 307808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	314.0	
MB 570-307808/7	Method Blank	Total/NA	Water	314.0	
LCS 570-307808/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-307808/9	Lab Control Sample Dup	Total/NA	Water	314.0	

HPLC/IC

Analysis Batch: 308826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	NO2NO3 Calc	

Metals

Prep Batch: 307908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total Recoverable	Water	200.8	
MB 570-307908/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-307908/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-307908/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	

Filtration Batch: 308039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-3	Outfall018_20230226_Comp_F	Dissolved	Water	Filtration	
MB 570-308039/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-308039/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-308039/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 308055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total Recoverable	Water	200.8	307908
MB 570-307908/1-A	Method Blank	Total Recoverable	Water	200.8	307908
LCS 570-307908/2-A	Lab Control Sample	Total Recoverable	Water	200.8	307908
LCSD 570-307908/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	307908

Analysis Batch: 308099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-3	Outfall018_20230226_Comp_F	Dissolved	Water	200.8	308039

Analysis Batch: 308100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-308039/1-A	Method Blank	Dissolved	Water	200.8	308039
LCS 570-308039/2-A	Lab Control Sample	Dissolved	Water	200.8	308039
LCSD 570-308039/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	308039

Prep Batch: 308521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	245.1	
MB 570-308521/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-308521/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-308521/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
570-129084-1 MS	Outfall018_20230226_Comp	Total/NA	Water	245.1	
570-129084-1 MSD	Outfall018_20230226_Comp	Total/NA	Water	245.1	

Filtration Batch: 308522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-3	Outfall018_20230226_Comp_F	Dissolved	Water	Filtration	
MB 570-308522/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-308522/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-308522/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	

Metals (Continued)

Filtration Batch: 308522 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-3 MS	Outfall018_20230226_Comp_F	Dissolved	Water	Filtration	
570-129084-3 MSD	Outfall018_20230226_Comp_F	Dissolved	Water	Filtration	

Prep Batch: 308527

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-3	Outfall018_20230226_Comp_F	Dissolved	Water	245.1	308522
MB 570-308522/1-B	Method Blank	Dissolved	Water	245.1	308522
LCS 570-308522/2-B	Lab Control Sample	Dissolved	Water	245.1	308522
LCSD 570-308522/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	308522
570-129084-3 MS	Outfall018_20230226_Comp_F	Dissolved	Water	245.1	308522
570-129084-3 MSD	Outfall018_20230226_Comp_F	Dissolved	Water	245.1	308522

Analysis Batch: 308860

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	245.1	308521
570-129084-3	Outfall018_20230226_Comp_F	Dissolved	Water	245.1	308527
MB 570-308521/1-A	Method Blank	Total/NA	Water	245.1	308521
MB 570-308522/1-B	Method Blank	Dissolved	Water	245.1	308527
LCS 570-308521/2-A	Lab Control Sample	Total/NA	Water	245.1	308521
LCS 570-308522/2-B	Lab Control Sample	Dissolved	Water	245.1	308527
LCSD 570-308521/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	308521
LCSD 570-308522/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	308527
570-129084-1 MS	Outfall018_20230226_Comp	Total/NA	Water	245.1	308521
570-129084-1 MSD	Outfall018_20230226_Comp	Total/NA	Water	245.1	308521
570-129084-3 MS	Outfall018_20230226_Comp_F	Dissolved	Water	245.1	308527
570-129084-3 MSD	Outfall018_20230226_Comp_F	Dissolved	Water	245.1	308527

General Chemistry

Analysis Batch: 307520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	SM 5540C	307522
MB 570-307522/5-A	Method Blank	Total/NA	Water	SM 5540C	307522
LCS 570-307522/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	307522
LCSD 570-307522/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	307522
570-129084-1 MS	Outfall018_20230226_Comp	Total/NA	Water	SM 5540C	307522
570-129084-1 MSD	Outfall018_20230226_Comp	Total/NA	Water	SM 5540C	307522

Analysis Batch: 307521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	SM 2130B	
LCSSRM 570-307521/3	Lab Control Sample	Total/NA	Water	SM 2130B	

Prep Batch: 307522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	SM 5540C	
MB 570-307522/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-307522/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-307522/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	
570-129084-1 MS	Outfall018_20230226_Comp	Total/NA	Water	SM 5540C	

General Chemistry (Continued)

Prep Batch: 307522 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1 MSD	Outfall018_20230226_Comp	Total/NA	Water	SM 5540C	

Analysis Batch: 308515

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	SM 2540C	
MB 570-308515/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-308515/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-308515/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 308912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	SM 2540D	
MB 570-308912/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-308912/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-308912/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 309199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	Kelada 01	
MB 570-309199/12	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-309199/13	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-309199/15	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-309199/11	Lab Control Sample	Total/NA	Water	Kelada 01	

Analysis Batch: 309219

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	SM5210B	
USB 570-309219/2	Method Blank	Total/NA	Water	SM5210B	
LCS 570-309219/4	Lab Control Sample	Total/NA	Water	SM5210B	

Prep Batch: 309909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	Distill/Ammonia	
MB 570-309909/5-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-309909/6-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-309909/7-A	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 309958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	350.1	309909
MB 570-309909/5-A	Method Blank	Total/NA	Water	350.1	309909
LCS 570-309909/6-A	Lab Control Sample	Total/NA	Water	350.1	309909
LCSD 570-309909/7-A	Lab Control Sample Dup	Total/NA	Water	350.1	309909

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-1

Client Sample ID: Outfall018_20230226_Comp

Date Collected: 02/26/23 07:55
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129084-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			1048.6 mL	2 mL	307149	02/28/23 05:19	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	307608	02/28/23 18:18	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Prep	608			1500 mL	1 mL	308323	03/02/23 08:41	OAJ3	EET CAL 4
Total/NA	Analysis	608.3		1	1 mL	1 mL	310111	03/09/23 17:05	N5Y3	EET CAL 4
	Instrument ID: GC52A									
Total/NA	Analysis	300.0		2	4 mL	4 mL	307134	02/28/23 01:35	PS	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	300.0		2	4 mL	4 mL	307135	02/28/23 01:35	PS	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	314.0		1	4 mL	4 mL	307808	03/01/23 00:19	PS	EET CAL 4
	Instrument ID: IC8									
Total/NA	Analysis	NO2NO3 Calc		1			308826	03/03/23 14:06	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total Recoverable	Prep	200.8			50 mL	50 mL	307908	03/01/23 06:30	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			308055	03/01/23 11:05	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Prep	245.1			25 mL	50 mL	308521	03/03/23 09:45	C0YH	EET CAL 4
Total/NA	Analysis	245.1		1			308860	03/03/23 13:40	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	309909	03/08/23 09:40	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	309958	03/08/23 11:58	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	309199	03/03/23 20:26	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			307521	02/27/23 23:03	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	308515	03/02/23 16:27	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	308912	03/03/23 18:43	BDH9	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Prep	SM 5540C			100 mL	100 mL	307522	02/27/23 20:28	TXA8	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	307520	02/27/23 21:57	TXA8	EET CAL 4
	Instrument ID: UV8									
Total/NA	Analysis	SM5210B		1			309219	02/27/23 20:28	U7UR	EET CAL 4
	Instrument ID: BOD3									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-1

Client Sample ID: Outfall018_20230226_Comp_F

Date Collected: 02/26/23 07:55
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129084-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	308039	03/01/23 12:58	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			308099	03/01/23 14:25	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Dissolved	Filtration	Filtration			25 mL	25 mL	308522	03/02/23 16:55	C0YH	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	308527	03/03/23 09:45	C0YH	EET CAL 4
Dissolved	Analysis	245.1		1			308860	03/03/23 12:17	C0YH	EET CAL 4
	Instrument ID: HG8									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129084-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-1

Method	Method Description	Protocol	Laboratory
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
608.3	Organochlorine Pesticides in Water	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
SM5210B	BOD, 5 Day	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
608	Liquid-Liquid Extraction (Separatory Funnel)	EPA	EET CAL 4
625	Liquid-Liquid Extraction	EPA	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129084-1	Outfall018_20230226_Comp	Water	02/26/23 07:55	02/27/23 18:00
570-129084-3	Outfall018_20230226_Comp_F	Water	02/26/23 07:55	02/27/23 18:00

129084

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-129084 Chain of Custody

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001 002, 011 018] Outfall 018 Comp
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel 714-895-5494 **ECI Project #57013187**	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

									R	R	R	R	R	R	R	R	R	R	R	C			
									ANALYSIS REQUIRED														
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.8) Zn (E200.8) Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl- SO_4, Nitrate-N Nitrite-N NO3+NO2-N Perchlorate (E300)	Turbidity TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals. Mercury (E245.1)			
Outfall 018	Outfall018_20230226_Comp	2/26/2023 0755	WM	500 mL Poly	1	HNO_3	90	Yes	X										X				
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	1L Poly	1	None	115	No			X												
			WM	500 mL Poly	2	None	120	No				X											
			WM	500 mL Poly	2	None	130	No					X										48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X									48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X							
			WM	1 L Glass Amber	2	None	170	No									X						
			WM	1 L Glass Amber	2	None	180	No										X					
			WM	1L Poly	1	None	185	No							X								
	Outfall018_20230226_Comp_Extra	2/26/2023 0755	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	500 mL Poly	2	None	120	No				H											Hold
			WM	500 mL Poly	2	None	130	No					H										Hold
			WM	1 L Glass Amber	2	None	170	No									H						Hold
			WM	1 L Glass Amber	2	None	180	No											H				Hold

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Legend C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	2-27-2023/1120	ITA	[signature]	2/27/23 1120 EC
[signature]	2/27/23	1800 EC	[signature] EC	2-27-23 18'00

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: __X__

2.3/2.2, 2.7/2.6 SC12

3/12/2023

129084

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address. Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011 018] Outfall 018 Comp
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin CA 92780 Tel. 714-895-5494 **ECI Project #57013187**	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED											
									R	R	R	R	R	C						
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals. (E200.8): Zn (E200.8). Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0) Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0) Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)		Total Dissolved Metals. Mercury (E245.1)								
Outfall 018	Outfall018_20230226_Comp_F	2/26/2023 0755	WM	1L Poly	1	None	200	Yes	X											
			WM	borosilicate vials	1	None	320	No					X							Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230226_Comp	2/26/2023 0755	WM	500 mL Poly	1	NaOH	220	No		X										
			WM	2.5 Gal Cube	1	None	225	No			X									Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No												

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	2-27-2023 1120	H&A	[signature]	2/27/23 1120 EC
[signature]	2/27/23	1800 EC	[signature] EC	2-27-23 18:00
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: X
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: X

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3/12/2023
2019-2020 Rainy Season
Version 4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129084-3
Address: 13715 Rider Trail North,	Due Date Requested: 4/3/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL Routine Outfall 001 Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	906.0/LSC_Dist_Susp Tritium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230226_Comp (570-129084-1)	2/26/23	07:55 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		02/28/23 1018	EC			
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

3/12/2023

ICOC No:
570-208625

Containers

Count	Container Type	Preservative

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129084-1

Login Number: 129084
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/21/2023 6:42:50 PM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall 018 - Comp

JOB NUMBER

570-129084-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Eurofins Calscience

Job Notes

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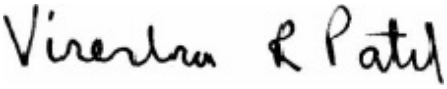
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129084-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129084-2

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.2º C and 2.6º C.

Dioxin
Method 1613B: The automated ending resolution check scheduled to be performed on March 20, 2023 at approximately 22:23 did not print. A manual resolution check was performed, without retuning, at the end of the second sequence on March 21, 2023 at 10:21, which indicated that the instrument maintained 10,000 resolution. The approximately 12 hour delay in printing the ending resolution check has no impact on the data.

Outfall018_20230226_Comp (570-129084-1), (CCV 320-662109/2), (LCS 320-659338/2-A), (LCSD 320-659338/3-A), (MB 320-659338/1-A) and (WDM 320-662109/1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-2

Client Sample ID: Outfall018_20230226_Comp

Lab Sample ID: 570-129084-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.00000061	J,DX q	0.000048	0.00000024	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000017	J,DX q MB	0.000048	0.00000032	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000011	J,DX MB	0.000048	0.00000031	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.00000080	J,DX q	0.000048	0.00000028	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000010	J,DX	0.000048	0.00000022	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000051	J,DX q	0.000048	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.00000086	J,DX q MB	0.000048	0.00000021	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000038	J,DX q	0.000048	0.00000019	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000095	J,DX MB	0.000048	0.00000047	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000030	J,DX MB	0.000048	0.00000030	ug/L	1		1613B	Total/NA
OCDD	0.000074	J,DX MB	0.000096	0.00000065	ug/L	1		1613B	Total/NA
OCDF	0.0000059	J,DX MB	0.000096	0.00000036	ug/L	1		1613B	Total/NA
Total PeCDF	0.00000061	J,DX q	0.000048	0.00000025	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000062	J,DX q MB	0.000048	0.00000030	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000036	J,DX q MB	0.000048	0.00000021	ug/L	1		1613B	Total/NA
Total HpCDD	0.000017	J,DX MB	0.000048	0.00000047	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000045	J,DX q MB	0.000048	0.00000031	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: Outfall018_20230226_Comp
Date Collected: 02/26/23 07:55
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129084-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000096	0.00000070	ug/L		03/09/23 04:30	03/20/23 21:37	1
2,3,7,8-TCDF	ND		0.0000096	0.00000031	ug/L		03/09/23 04:30	03/20/23 21:37	1
1,2,3,7,8-PeCDD	ND		0.000048	0.00000048	ug/L		03/09/23 04:30	03/20/23 21:37	1
1,2,3,7,8-PeCDF	**0.00000061**	**J,DX q**	0.000048	0.00000024	ug/L		03/09/23 04:30	03/20/23 21:37	1
2,3,4,7,8-PeCDF	ND		0.000048	0.00000027	ug/L		03/09/23 04:30	03/20/23 21:37	1
1,2,3,4,7,8-HxCDD	**0.0000017**	**J,DX q MB**	0.000048	0.00000032	ug/L		03/09/23 04:30	03/20/23 21:37	1
1,2,3,6,7,8-HxCDD	**0.0000011**	**J,DX MB**	0.000048	0.00000031	ug/L		03/09/23 04:30	03/20/23 21:37	1
1,2,3,7,8,9-HxCDD	**0.00000080**	**J,DX q**	0.000048	0.00000028	ug/L		03/09/23 04:30	03/20/23 21:37	1
1,2,3,4,7,8-HxCDF	**0.0000010**	**J,DX**	0.000048	0.00000022	ug/L		03/09/23 04:30	03/20/23 21:37	1
1,2,3,6,7,8-HxCDF	**0.00000051**	**J,DX q**	0.000048	0.00000021	ug/L		03/09/23 04:30	03/20/23 21:37	1
1,2,3,7,8,9-HxCDF	**0.00000086**	**J,DX q MB**	0.000048	0.00000021	ug/L		03/09/23 04:30	03/20/23 21:37	1
2,3,4,6,7,8-HxCDF	**0.00000038**	**J,DX q**	0.000048	0.00000019	ug/L		03/09/23 04:30	03/20/23 21:37	1
1,2,3,4,6,7,8-HpCDD	**0.0000095**	**J,DX MB**	0.000048	0.00000047	ug/L		03/09/23 04:30	03/20/23 21:37	1
1,2,3,4,6,7,8-HpCDF	**0.0000030**	**J,DX MB**	0.000048	0.00000030	ug/L		03/09/23 04:30	03/20/23 21:37	1
1,2,3,4,7,8,9-HpCDF	ND		0.000048	0.00000032	ug/L		03/09/23 04:30	03/20/23 21:37	1
OCDD	**0.000074**	**J,DX MB**	0.000096	0.00000065	ug/L		03/09/23 04:30	03/20/23 21:37	1
OCDF	**0.0000059**	**J,DX MB**	0.000096	0.00000036	ug/L		03/09/23 04:30	03/20/23 21:37	1
Total TCDD	ND		0.0000096	0.00000070	ug/L		03/09/23 04:30	03/20/23 21:37	1
Total TCDF	ND		0.0000096	0.00000031	ug/L		03/09/23 04:30	03/20/23 21:37	1
Total PeCDD	ND		0.000048	0.00000048	ug/L		03/09/23 04:30	03/20/23 21:37	1
Total PeCDF	**0.00000061**	**J,DX q**	0.000048	0.00000025	ug/L		03/09/23 04:30	03/20/23 21:37	1
Total HxCDD	**0.0000062**	**J,DX q MB**	0.000048	0.00000030	ug/L		03/09/23 04:30	03/20/23 21:37	1
Total HxCDF	**0.0000036**	**J,DX q MB**	0.000048	0.00000021	ug/L		03/09/23 04:30	03/20/23 21:37	1
Total HpCDD	**0.000017**	**J,DX MB**	0.000048	0.00000047	ug/L		03/09/23 04:30	03/20/23 21:37	1
Total HpCDF	**0.0000045**	**J,DX q MB**	0.000048	0.00000031	ug/L		03/09/23 04:30	03/20/23 21:37	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*71*		*25 - 164*	*03/09/23 04:30*	*03/20/23 21:37*	*1*
13C-2,3,7,8-TCDF	*65*		*24 - 169*	*03/09/23 04:30*	*03/20/23 21:37*	*1*
13C-1,2,3,7,8-PeCDD	*90*		*25 - 181*	*03/09/23 04:30*	*03/20/23 21:37*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: Outfall018_20230226_Comp
Lab Sample ID: 570-129084-1
Date Collected: 02/26/23 07:55
Matrix: Water
Date Received: 02/27/23 18:00

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDF	81		24 - 185	03/09/23 04:30	03/20/23 21:37	1
13C-2,3,4,7,8-PeCDF	82		21 - 178	03/09/23 04:30	03/20/23 21:37	1
13C-1,2,3,4,7,8-HxCDD	78		32 - 141	03/09/23 04:30	03/20/23 21:37	1
13C-1,2,3,6,7,8-HxCDD	75		28 - 130	03/09/23 04:30	03/20/23 21:37	1
13C-1,2,3,4,7,8-HxCDF	70		26 - 152	03/09/23 04:30	03/20/23 21:37	1
13C-1,2,3,6,7,8-HxCDF	73		26 - 123	03/09/23 04:30	03/20/23 21:37	1
13C-1,2,3,7,8,9-HxCDF	80		29 - 147	03/09/23 04:30	03/20/23 21:37	1
13C-2,3,4,6,7,8-HxCDF	78		28 - 136	03/09/23 04:30	03/20/23 21:37	1
13C-1,2,3,4,6,7,8-HpCDD	94		23 - 140	03/09/23 04:30	03/20/23 21:37	1
13C-1,2,3,4,6,7,8-HpCDF	79		28 - 143	03/09/23 04:30	03/20/23 21:37	1
13C-1,2,3,4,7,8,9-HpCDF	89		26 - 138	03/09/23 04:30	03/20/23 21:37	1
13C-OCDD	95		17 - 157	03/09/23 04:30	03/20/23 21:37	1
13C-OCDF	90		17 - 157	03/09/23 04:30	03/20/23 21:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	76		35 - 197	03/09/23 04:30	03/20/23 21:37	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (35-197)								
570-129084-1	Outfall018_20230226_Comp	76								
MB 320-659338/1-A	Method Blank	84								

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (31-191)								
LCS 320-659338/2-A	Lab Control Sample	85								
LCSD 320-659338/3-A	Lab Control Sample Dup	86								

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-129084-1	Outfall018_20230226_Comp	71	65	90	81	82	78	75	70
MB 320-659338/1-A	Method Blank	71	62	90	77	78	70	72	59

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-129084-1	Outfall018_20230226_Comp	73	80	78	94	79	89	95	90
MB 320-659338/1-A	Method Blank	65	71	69	88	71	81	89	80

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-659338/2-A	Lab Control Sample	65	58	83	71	70	63	62	51
LCSD 320-659338/3-A	Lab Control Sample Dup	77	70	96	82	84	72	68	57

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-659338/2-A	Lab Control Sample	56	65	61	78	63	72	78	71
LCSD 320-659338/3-A	Lab Control Sample Dup	64	75	71	91	71	84	93	84

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129084-2
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-659338/1-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 659338

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000097	ug/L		03/09/23 04:30	03/20/23 13:41	1
2,3,7,8-TCDF	ND		0.000010	0.00000055	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000045	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,7,8-PeCDF	ND		0.000050	0.00000037	ug/L		03/09/23 04:30	03/20/23 13:41	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000042	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,7,8-HxCDD	0.00000174	J,DX	0.000050	0.00000028	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,6,7,8-HxCDD	0.000000455	J,DX q	0.000050	0.00000029	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.00000025	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.00000028	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000026	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,7,8,9-HxCDF	0.000000967	J,DX	0.000050	0.00000026	ug/L		03/09/23 04:30	03/20/23 13:41	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.00000024	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,6,7,8-HpCDD	0.00000104	J,DX q	0.000050	0.00000024	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,6,7,8-HpCDF	0.00000126	J,DX	0.000050	0.00000029	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.00000032	ug/L		03/09/23 04:30	03/20/23 13:41	1
OCDD	0.0000112	J,DX	0.00010	0.00000031	ug/L		03/09/23 04:30	03/20/23 13:41	1
OCDF	0.00000213	J,DX q	0.00010	0.00000039	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total TCDD	ND		0.000010	0.00000097	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total TCDF	ND		0.000010	0.00000055	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total PeCDD	ND		0.000050	0.00000045	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total PeCDF	ND		0.000050	0.00000042	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total HxCDD	0.00000263	J,DX q	0.000050	0.00000028	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total HxCDF	0.000000967	J,DX	0.000050	0.00000026	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total HpCDD	0.00000272	J,DX q	0.000050	0.00000024	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total HpCDF	0.00000126	J,DX	0.000050	0.00000031	ug/L		03/09/23 04:30	03/20/23 13:41	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*71*		*25 - 164*	*03/09/23 04:30*	*03/20/23 13:41*	*1*
13C-2,3,7,8-TCDF	*62*		*24 - 169*	*03/09/23 04:30*	*03/20/23 13:41*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-659338/1-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 659338

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDD	90		25 - 181	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,7,8-PeCDF	77		24 - 185	03/09/23 04:30	03/20/23 13:41	1
13C-2,3,4,7,8-PeCDF	78		21 - 178	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,7,8-HxCDD	70		32 - 141	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,6,7,8-HxCDD	72		28 - 130	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,7,8-HxCDF	59		26 - 152	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,6,7,8-HxCDF	65		26 - 123	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,7,8,9-HxCDF	71		29 - 147	03/09/23 04:30	03/20/23 13:41	1
13C-2,3,4,6,7,8-HxCDF	69		28 - 136	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,6,7,8-HpCDD	88		23 - 140	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,6,7,8-HpCDF	71		28 - 143	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,7,8,9-HpCDF	81		26 - 138	03/09/23 04:30	03/20/23 13:41	1
13C-OCDD	89		17 - 157	03/09/23 04:30	03/20/23 13:41	1
13C-OCDF	80		17 - 157	03/09/23 04:30	03/20/23 13:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	84		35 - 197	03/09/23 04:30	03/20/23 13:41	1

Lab Sample ID: LCS 320-659338/2-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 659338

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000186		ug/L		93	67 - 158
2,3,7,8-TCDF	0.000200	0.000212		ug/L		106	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.000901		ug/L		90	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.000947		ug/L		95	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000953		ug/L		95	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.000912		ug/L		91	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000959		ug/L		96	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000963		ug/L		96	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.000953		ug/L		95	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000956		ug/L		96	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.000924		ug/L		92	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000948		ug/L		95	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.000934		ug/L		93	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.000984		ug/L		98	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000935		ug/L		94	78 - 138
OCDD	0.00200	0.00191		ug/L		96	78 - 144
OCDF	0.00200	0.00195		ug/L		97	63 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	65		20 - 175
13C-2,3,7,8-TCDF	58		22 - 152
13C-1,2,3,7,8-PeCDD	83		21 - 227
13C-1,2,3,7,8-PeCDF	71		21 - 192
13C-2,3,4,7,8-PeCDF	70		13 - 328

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-659338/2-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 659338

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCDD	63		21 - 193
13C-1,2,3,6,7,8-HxCDD	62		25 - 163
13C-1,2,3,4,7,8-HxCDF	51		19 - 202
13C-1,2,3,6,7,8-HxCDF	56		21 - 159
13C-1,2,3,7,8,9-HxCDF	65		17 - 205
13C-2,3,4,6,7,8-HxCDF	61		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	78		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	63		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	72		20 - 186
13C-OCDD	78		13 - 199
13C-OCDF	71		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	85		31 - 191

Lab Sample ID: LCSD 320-659338/3-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 659338

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000197		ug/L		98	67 - 158	6	50
2,3,7,8-TCDF			0.000200	0.000218		ug/L		109	75 - 158	3	50
1,2,3,7,8-PeCDD			0.00100	0.000927		ug/L		93	70 - 142	3	50
1,2,3,7,8-PeCDF			0.00100	0.000974		ug/L		97	80 - 134	3	50
2,3,4,7,8-PeCDF			0.00100	0.000961		ug/L		96	68 - 160	1	50
1,2,3,4,7,8-HxCDD			0.00100	0.000919		ug/L		92	70 - 164	1	50
1,2,3,6,7,8-HxCDD			0.00100	0.00100		ug/L		100	76 - 134	4	50
1,2,3,7,8,9-HxCDD			0.00100	0.00101		ug/L		101	64 - 162	4	50
1,2,3,4,7,8-HxCDF			0.00100	0.000989		ug/L		99	72 - 134	4	50
1,2,3,6,7,8-HxCDF			0.00100	0.000954		ug/L		95	84 - 130	0	50
1,2,3,7,8,9-HxCDF			0.00100	0.000953		ug/L		95	78 - 130	3	50
2,3,4,6,7,8-HxCDF			0.00100	0.000958		ug/L		96	70 - 156	1	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000942		ug/L		94	70 - 140	1	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.000988		ug/L		99	82 - 122	0	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000957		ug/L		96	78 - 138	2	50
OCDD			0.00200	0.00195		ug/L		97	78 - 144	2	50
OCDF			0.00200	0.00199		ug/L		99	63 - 170	2	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	77		20 - 175
13C-2,3,7,8-TCDF	70		22 - 152
13C-1,2,3,7,8-PeCDD	96		21 - 227
13C-1,2,3,7,8-PeCDF	82		21 - 192
13C-2,3,4,7,8-PeCDF	84		13 - 328
13C-1,2,3,4,7,8-HxCDD	72		21 - 193
13C-1,2,3,6,7,8-HxCDD	68		25 - 163
13C-1,2,3,4,7,8-HxCDF	57		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-659338/3-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 659338

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	64		21 - 159
13C-1,2,3,7,8,9-HxCDF	75		17 - 205
13C-2,3,4,6,7,8-HxCDF	71		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	91		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	71		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	84		20 - 186
13C-OCDD	93		13 - 199
13C-OCDF	84		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	86		31 - 191

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129084-2
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Specialty Organics

Prep Batch: 659338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	1613B	
MB 320-659338/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-659338/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-659338/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 662109

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	1613B	659338
MB 320-659338/1-A	Method Blank	Total/NA	Water	1613B	659338
LCS 320-659338/2-A	Lab Control Sample	Total/NA	Water	1613B	659338
LCSD 320-659338/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	659338

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-2

Client Sample ID: Outfall018_20230226_Comp
Date Collected: 02/26/23 07:55
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129084-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			1046.7 mL	20.0 uL	659338	03/09/23 04:30	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	662109	03/20/23 21:37	DB	EET SAC
	Instrument ID: 12D5									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129084-2
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-24
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	02-28-26
Utah	NELAP	CA000442021-12	02-28-23 *
Virginia	NELAP	460278	03-14-23 *
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-2

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129084-1	Outfall018_20230226_Comp	Water	02/26/23 07:55	02/27/23 18:00

129084

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-129084 Chain of Custody

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001 002, 011 018] Outfall 018 Comp
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel 714-895-5494 **ECI Project #57013187**	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

									R	R	R	R	R	R	R	R	R	R	R	C			
									ANALYSIS REQUIRED														
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.8) Zn (E200.8) Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl- SO_4, Nitrate-N Nitrite-N NO_3+NO_2-N Perchlorate (E300)	Turbidity TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals. Mercury (E245.1)			
Outfall 018	Outfall018_20230226_Comp	2/26/2023 0755	WM	500 mL Poly	1	HNO_3	90	Yes	X										X				
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	1L Poly	1	None	115	No			X												
			WM	500 mL Poly	2	None	120	No				X											
			WM	500 mL Poly	2	None	130	No					X										48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X									48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X							
			WM	1 L Glass Amber	2	None	170	No									X						
			WM	1 L Glass Amber	2	None	180	No										X					
			WM	1L Poly	1	None	185	No							X								
	Outfall018_20230226_Comp_Extra	2/26/2023 0755	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	500 mL Poly	2	None	120	No				H											Hold
			WM	500 mL Poly	2	None	130	No					H										Hold
			WM	1 L Glass Amber	2	None	170	No									H						Hold
			WM	1 L Glass Amber	2	None	180	No											H				Hold

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1

2

Legend C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	2-27-2023/1120	ITA	[signature]	2/27/23 1120 EC
[signature]	2/27/23	1800 EC	[signature] EC	2-27-23 18'00

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: __X__

2.3/2.2, 2.7/2.6 SC12

3/21/2023

129084

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address. Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011 018] Outfall 018 Comp
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin CA 92780 Tel. 714-895-5494 **ECI Project #57013187**	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED											
									R	R	R	R	R	C						
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals. (E200.8): Zn (E200.8). Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0) Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0) Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)		Total Dissolved Metals. Mercury (E245.1)							
Outfall 018	Outfall018_20230226_Comp_F	2/26/2023 0755	WM	1L Poly	1	None	200	Yes	X											
			WM	borosilicate vials	1	None	320	No					X							Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230226_Comp	2/26/2023 0755	WM	500 mL Poly	1	NaOH	220	No		X										
			WM	2.5 Gal Cube	1	None	225	No			X									Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No												

3

1

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Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	2-27-2023 1120	H&A	[signature]	2/27/23 1120 EC
[signature]	2/27/23	1800 EC	[signature] EC	2-27-23 18:00

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

3/21/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129084-3
Address: 13715 Rider Trail North,	Due Date Requested: 4/3/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL Routine Outfall 001 Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	906.0/LSC_Dist_Susp Tritium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230226_Comp (570-129084-1)	2/26/23	07:55 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		02/28/23 1018	EC			
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-208625

Containers

Count	Container Type	Preservative

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208734.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-129084-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall 018 - Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall018_20230226_Comp (570-129084-1)	2/26/23	07:55 Pacific		Water			X	2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 3.1.23 900	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.7c

Ver: 06/08/2021

3/21/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129084-2

Login Number: 129084
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129084-2

Login Number: 129084
List Number: 2
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 03/01/23 01:40 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.7c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/1/2023 2:36:02 PM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall 018 - Comp

JOB NUMBER

570-129084-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

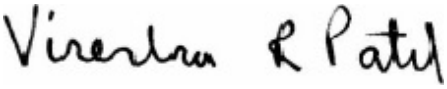
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-3

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129084-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129084-3

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.2°C and 2.6°C

Alpha Spectroscopy
Method A01R_U: Uranium Prep Batch 160-604368:The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: Outfall018_20230226_Comp (570-129084-1).

Method A01R_U: Isotopic Uranium batch 604368Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.Outfall018_20230226_Comp (570-129084-1), (LCS 160-604368/2-A), (MB 160-604368/1-A), (570-129285-J-1-D) and (570-129285-J-1-E DU)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Gamma Spectroscopy
Method 901.1_Cs: Gamma Prep Batch 160-604735Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:Inferred from Reported to AnalyteTh-234 Pa-234Th-234
U-238Pb-210 Po-210Pb-210 Bi-210Cs-137 Ba-137mPb-212 Po-216Xe-131m Xe-131Sb-12
Te-125mAg-108m Ag-108Rh-106 Ru-106Pb-212 Th-228Pb-212 Ra-224U-235
Th-231Ac-228 Th-232Ac-228 Ra-228Th-227 Ra-223Th-227 Ac-227Th-227 Bi-211Th-227
Pb-211Bi-214 Ra-226Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall018_20230226_Comp (570-129084-1) and (570-129084-R-1-H DU)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Gas Flow Proportional Counter
Method 900.0: Gross Alpha and Gross Beta batch 604346The LCS recovered at (128%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (72-149%) per method requirements. The LCS passes, no further action is required (LCS 160-604346/2-A)

Method 900.0: Gross Alpha and Gross Beta batch 604346Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.Outfall018_20230226_Comp (570-129084-1), (LCS 160-604346/2-A), (LCSB 160-604346/3-A), (MB 160-604346/1-A), (670-16310-C-2-A), (670-16310-C-2-D DU), (670-16310-C-2-B MS) and (670-16310-C-2-C MSBT)

Method 903.0: Radium-226 Prep Batch 160-602356The following sample was prepared at a reduced aliquot due to Matrix: Outfall018_20230226_Comp (570-129084-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method 903.0: Radium-226 batch 602356Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.Outfall018_20230226_Comp (570-129084-1), (LCS 160-602356/2-A), (LCSD 160-602356/3-A) and (MB 160-602356/1-A)

Job ID: 570-129084-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method 904.0: Radium-228 Prep Batch 160-602360The following sample was prepared at a reduced aliquot due to Matrix: Outfall018_20230226_Comp (570-129084-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method 904.0: Radium-228 batch 602360Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.Outfall018_20230226_Comp (570-129084-1), (LCS 160-602360/2-A), (LCSD 160-602360/3-A) and (MB 160-602360/1-A)

Method 905_Sr90: Strontium 90 Prep Batch 160-603033The following sample was prepared at a reduced aliquot due to Matrix: Outfall018_20230226_Comp (570-129084-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method 905_Sr90: Strontium-90 prep batch 160-603495:Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.Outfall018_20230226_Comp (570-129084-1), (LCS 160-603033/2-A), (LCSD 160-603033/3-A) and (MB 160-603033/1-A)

Method 905_Sr90: Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Liquid Scintillation Counter

Method 906.0: Tritium 605070Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall018_20230226_Comp (570-129084-1), (LCS 160-605070/2-A), (MB 160-605070/1-A), (160-49329-A-1-A), (160-49329-A-1-B DU), (160-49329-A-2-A) and (160-49329-A-2-B MS)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129084-3
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Client Sample ID: Outfall018_20230226_Comp
Lab Sample ID: 570-129084-1

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-3

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: Outfall018_20230226_Comp
Date Collected: 02/26/23 07:55
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129084-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.357	U	1.20	1.20	3.00	2.61	pCi/L	03/20/23 10:44	03/28/23 08:17	1
Gross Beta	**4.09**		1.00	1.08	4.00	1.18	pCi/L	03/20/23 10:44	03/28/23 08:17	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-3

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: Outfall018_20230226_Comp
Date Collected: 02/26/23 07:55
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129084-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	3.32	U	8.00	8.01	20.0	10.2	pCi/L	03/22/23 16:26	03/29/23 21:26	1
Potassium-40	-60.8	U	160	161		220	pCi/L	03/22/23 16:26	03/29/23 21:26	1

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: Outfall018_20230226_Comp
Date Collected: 02/26/23 07:55
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129084-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.168	U	0.140	0.141	1.00	0.212	pCi/L	03/06/23 09:11	03/29/23 22:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*63.0*		*30 - 110*	*03/06/23 09:11*	*03/29/23 22:00*	*1*

Client Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-129084-3
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: Outfall018_20230226_Comp
Date Collected: 02/26/23 07:55
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129084-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.737	U	0.587	0.591	1.00	0.907	pCi/L	03/06/23 09:48	03/16/23 11:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*63.0*		*30 - 110*	*03/06/23 09:48*	*03/16/23 11:57*	*1*
Y Carrier	*89.3*		*30 - 110*	*03/06/23 09:48*	*03/16/23 11:57*	*1*

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: Outfall018_20230226_Comp
Date Collected: 02/26/23 07:55
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129084-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.242	U	0.496	0.496	3.00	0.850	pCi/L	03/09/23 13:03	03/17/23 18:33	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*76.8*		*30 - 110*	*03/09/23 13:03*	*03/17/23 18:33*	*1*
Y Carrier	*72.5*		*30 - 110*	*03/09/23 13:03*	*03/17/23 18:33*	*1*

Client Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-129084-3
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: Outfall018_20230226_Comp
Lab Sample ID: 570-129084-1
Date Collected: 02/26/23 07:55
Matrix: Water
Date Received: 02/27/23 18:00

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-75.2	U	160	160	500	309	pCi/L	03/27/23 11:11	03/27/23 23:40	1

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: Outfall018_20230226_Comp
Lab Sample ID: 570-129084-1
Date Collected: 02/26/23 07:55
Matrix: Water
Date Received: 02/27/23 18:00

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	**0.747**		0.303	0.306	1.00	0.190	pCi/L	03/20/23 12:19	03/27/23 14:38	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*93.3*		*30 - 110*	*03/20/23 12:19*	*03/27/23 14:38*	*1*

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-3

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-129084-1	Outfall018_20230226_Comp	63.0
LCS 160-602356/2-A	Lab Control Sample	87.6
LCSD 160-602356/3-A	Lab Control Sample Dup	83.3
MB 160-602356/1-A	Method Blank	87.6

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-129084-1	Outfall018_20230226_Comp	63.0	89.3
LCS 160-602360/2-A	Lab Control Sample	87.6	87.1
LCSD 160-602360/3-A	Lab Control Sample Dup	83.3	87.1
MB 160-602360/1-A	Method Blank	87.6	87.9

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-129084-1	Outfall018_20230226_Comp	76.8	72.5
LCS 160-603033/2-A	Lab Control Sample	79.1	82.2
LCSD 160-603033/3-A	Lab Control Sample Dup	80.1	82.2
MB 160-603033/1-A	Method Blank	87.1	81.1

Tracer/Carrier Legend

Sr = Sr Carrier

Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-129084-1	Outfall018_20230226_Comp	93.3
LCS 160-604368/2-A	Lab Control Sample	93.0
MB 160-604368/1-A	Method Blank	90.9

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-604346/1-A
Matrix: Water
Analysis Batch: 604975

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604346

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.1540	U	0.611	0.611	3.00	1.12	pCi/L	03/20/23 10:44	03/24/23 07:23	1
Gross Beta	0.1337	U	0.489	0.489	4.00	0.852	pCi/L	03/20/23 10:44	03/24/23 07:23	1

Lab Sample ID: LCS 160-604346/2-A
Matrix: Water
Analysis Batch: 604975

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604346

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	64.53		9.27	3.00	2.86	pCi/L	128	75 - 125

Lab Sample ID: LCSB 160-604346/3-A
Matrix: Water
Analysis Batch: 604974

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604346

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.5	70.28		7.55	4.00	0.889	pCi/L	96	75 - 125

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-604735/1-A
Matrix: Water
Analysis Batch: 605378

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604735

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	5.575	U	11.5	11.5	20.0	14.5	pCi/L	03/22/23 16:26	03/29/23 21:25	1
Potassium-40	-139.9	U	180	180		285	pCi/L	03/22/23 16:26	03/29/23 21:25	1

Lab Sample ID: LCS 160-604735/2-A
Matrix: Water
Analysis Batch: 605376

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604735

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	135500		16100		443	pCi/L	100	75 - 125
Cesium-137	40800	42170		5030	20.0	105	pCi/L	103	75 - 125
Cobalt-60	17800	18660		2230		54.8	pCi/L	105	75 - 125

Lab Sample ID: 570-129084-1 DU
Matrix: Water
Analysis Batch: 605597

Client Sample ID: Outfall018_20230226_Comp
Prep Type: Total/NA
Prep Batch: 604735

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	3.32	U	4.234	U	8.43	20.0	10.9	pCi/L	0.06	1
Potassium-40	-60.8	U	32.28	U	98.4		173	pCi/L	0.36	1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-602356/1-A
Matrix: Water
Analysis Batch: 605412

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 602356

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.03827	U	0.0641	0.0642	1.00	0.111	pCi/L	03/06/23 09:11	03/29/23 20:10	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.6*		*30 - 110*	*03/06/23 09:11*	*03/29/23 20:10*	*1*

Lab Sample ID: LCS 160-602356/2-A
Matrix: Water
Analysis Batch: 605412

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 602356

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	11.79		1.20	1.00	0.118	pCi/L	104	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*87.6*		*30 - 110*

Lab Sample ID: LCSD 160-602356/3-A
Matrix: Water
Analysis Batch: 605412

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 602356

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	11.01		1.14	1.00	0.107	pCi/L	97	75 - 125	0.33	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*83.3*		*30 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-602360/1-A
Matrix: Water
Analysis Batch: 603871

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 602360

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2985	U	0.293	0.294	1.00	0.468	pCi/L	03/06/23 09:48	03/16/23 12:10	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.6*		*30 - 110*	*03/06/23 09:48*	*03/16/23 12:10*	*1*
Y Carrier	*87.9*		*30 - 110*	*03/06/23 09:48*	*03/16/23 12:10*	*1*

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-602360/2-A
Matrix: Water
Analysis Batch: 603871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 602360

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.11	8.303		1.17	1.00	0.455	pCi/L	102	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*87.6*		*30 - 110*
Y Carrier	*87.1*		*30 - 110*

Lab Sample ID: LCSD 160-602360/3-A
Matrix: Water
Analysis Batch: 603871

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 602360

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.11	9.182		1.28	1.00	0.521	pCi/L	113	75 - 125	0.36	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*83.3*		*30 - 110*
Y Carrier	*87.1*		*30 - 110*

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-603033/1-A
Matrix: Water
Analysis Batch: 604031

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 603033

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.1395	U	0.149	0.149	3.00	0.303	pCi/L	03/09/23 13:03	03/17/23 18:29	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*87.1*		*30 - 110*	*03/09/23 13:03*	*03/17/23 18:29*	*1*
Y Carrier	*81.1*		*30 - 110*	*03/09/23 13:03*	*03/17/23 18:29*	*1*

Lab Sample ID: LCS 160-603033/2-A
Matrix: Water
Analysis Batch: 604031

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 603033

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.35	6.881		0.800	3.00	0.299	pCi/L	94	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*79.1*		*30 - 110*
Y Carrier	*82.2*		*30 - 110*

Method: 905 - Strontium-90 (GFPC) (Continued)

Lab Sample ID: LCSD 160-603033/3-A
Matrix: Water
Analysis Batch: 604031

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 603033

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.35	7.495		0.858	3.00	0.360	pCi/L	102	75 - 125	0.37	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*80.1*		*30 - 110*
Y Carrier	*82.2*		*30 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-605070/1-A
Matrix: Water
Analysis Batch: 605427

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605070

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-24.32	U	167	167	500	309	pCi/L	03/27/23 11:11	03/27/23 19:54	1

Lab Sample ID: LCS 160-605070/2-A
Matrix: Water
Analysis Batch: 605427

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605070

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2100	1848		360	500	314	pCi/L	88	75 - 125		

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-604368/1-A
Matrix: Water
Analysis Batch: 605170

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604368

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.08470	U	0.1041	0.1042	1.00	0.161	pCi/L	03/20/23 12:19	03/27/23 14:38	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*90.9*		*30 - 110*	*03/20/23 12:19*	*03/27/23 14:38*	*1*

Lab Sample ID: LCS 160-604368/2-A
Matrix: Water
Analysis Batch: 605172

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604368

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	11.77		1.40	1.00	0.159	pCi/L	92	75 - 125		
Uranium-238			13.0	13.98		1.59	1.00	0.126	pCi/L	107	75 - 125		

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-3

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: LCS 160-604368/2-A
Matrix: Water
Analysis Batch: 605172

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604368

Tracer	LCS %Yield	LCS Qualifier	Limits
Uranium-232	93.0		30 - 110

Rad

Prep Batch: 602356

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	PrecSep-21	
MB 160-602356/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-602356/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-602356/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 602360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	PrecSep_0	
MB 160-602360/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-602360/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-602360/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 603033

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	PrecSep-7	
MB 160-603033/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-603033/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-603033/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 604346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	Evaporation	
MB 160-604346/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-604346/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-604346/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Prep Batch: 604368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	ExtChrom	
MB 160-604368/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-604368/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 604735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	Fill_Geo-0	
MB 160-604735/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-604735/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-129084-1 DU	Outfall018_20230226_Comp	Total/NA	Water	Fill_Geo-0	

Prep Batch: 605070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129084-1	Outfall018_20230226_Comp	Total/NA	Water	LSC_Dist_Susp	
MB 160-605070/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-605070/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-3

Client Sample ID: Outfall018_20230226_Comp

Date Collected: 02/26/23 07:55
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129084-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Evaporation			153.57 mL	1.0 g	604346	03/20/23 10:44	MST	EET SL
Total/NA	Analysis	900.0		1			605256	03/28/23 08:17	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	604735	03/22/23 16:26	SEH	EET SL
Total/NA	Analysis	901.1		1			605376	03/29/23 21:26	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	PrecSep-21			746.38 mL	1.0 g	602356	03/06/23 09:11	DJP	EET SL
Total/NA	Analysis	903.0		1			605413	03/29/23 22:00	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			746.38 mL	1.0 g	602360	03/06/23 09:48	DJP	EET SL
Total/NA	Analysis	904.0		1			603963	03/16/23 11:57	FLC	EET SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	PrecSep-7			501.81 mL	1.0 g	603033	03/09/23 13:03	DJP	EET SL
Total/NA	Analysis	905		1			604030	03/17/23 18:33	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	LSC_Dist_Susp			97.37 mL	1.0 g	605070	03/27/23 11:11	SEH	EET SL
Total/NA	Analysis	906.0		1			605427	03/27/23 23:40	REV	EET SL
	Instrument ID: LSC3180									
Total/NA	Prep	ExtChrom			350.74 mL	1.0 mL	604368	03/20/23 12:19	MAL	EET SL
Total/NA	Analysis	A-01-R		1			605179	03/27/23 14:38	FLC	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129084-3
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	06-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-3

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy
EPA = US Environmental Protection Agency
None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129084-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129084-1	Outfall018_20230226_Comp	Water	02/26/23 07:55	02/27/23 18:00

129084

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-129084 Chain of Custody

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001 002, 011 018] Outfall 018 Comp
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel 714-895-5494 **ECI Project #57013187**	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

									R	R	R	R	R	R	R	R	R	R	R	C			
									ANALYSIS REQUIRED														
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.8) Zn (E200.8) Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl- SO_4, Nitrate-N Nitrite-N NO_3+NO_2-N Perchlorate (E300)	Turbidity TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals. Mercury (E245.1)			
Outfall 018	Outfall018_20230226_Comp	2/26/2023 0755	WM	500 mL Poly	1	HNO_3	90	Yes	X										X				
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	1L Poly	1	None	115	No			X												
			WM	500 mL Poly	2	None	120	No				X											
			WM	500 mL Poly	2	None	130	No					X										48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X									48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X							
			WM	1 L Glass Amber	2	None	170	No									X						
			WM	1 L Glass Amber	2	None	180	No										X					
			WM	1L Poly	1	None	185	No							X								
	Outfall018_20230226_Comp_Extra	2/26/2023 0755	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	500 mL Poly	2	None	120	No				H											Hold
			WM	500 mL Poly	2	None	130	No					H										Hold
			WM	1 L Glass Amber	2	None	170	No									H						Hold
			WM	1 L Glass Amber	2	None	180	No											H				Hold

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2

Legend C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	2-27-2023/1120	ITA	[signature]	2/27/23 1120 EC
[signature]	2/27/23	1800 EC	[signature] EC	2-27-23 18'00
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements. (Check)
No Level IV: _____ All Level IV: __X__

2.3/2.2, 2.7/2.6 SC12

4/1/2023

2019-2020 Rainy Season
Version 4

129084

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address. Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011 018] Outfall 018 Comp
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin CA 92780 Tel. 714-895-5494 **ECI Project #57013187**	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	ANALYSIS REQUIRED: Total Dissolved Metals. (E200.8): Zn (E200.8). Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0) Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0) Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)		Total Dissolved Metals. Mercury (E245.1)							
									R	R	R	R	R	C					
Outfall 018	Outfall018_20230226_Comp_F	2/26/2023 0755	WM	1L Poly	1	None	200	Yes	X										
			WM	borosilicate vials	1	None	320	No					X						Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230226_Comp	2/26/2023 0755	WM	500 mL Poly	1	NaOH	220	No		X									
			WM	2.5 Gal Cube	1	None	225	No			X								Unfiltered and unpreserved analysis. Separate RAD onto another workorder Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No											

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	2-27-2023 1120	H&A	[signature]	2/27/23 1120 EC
[signature]	2/27/23	1800 EC	[signature] EC	2-27-23 18:00
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

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4/1/2019
2019-2020 Rainy Season
Version 4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129084-3
Address: 13715 Rider Trail North,	Due Date Requested: 4/3/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL Routine Outfall 001 Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	906.0/LSC_Dist_Susp Tritium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230226_Comp (570-129084-1)	2/26/23	07:55 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		02/28/23 1018	EC			
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No:
570-208625

Containers

Count	Container Type	Preservative

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129084-3
Address: 13715 Rider Trail North, ,	Due Date Requested: 4/3/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall 001 - Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Tnzma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	906.0/LSC_Dist_Susp Tritium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230226_Comp (570-129084-1)	2/26/23	07:55 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	02/28/23 10:18	EC	FED EX		
FED EX					
Relinquished by:	Date/Time:	Company	Received by: Sierra Worthington	Date/Time: MAR 01 2023 0900	Company CTASL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129084-3

Login Number: 129084
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129084-3

Login Number: 129084
List Number: 3
Creator: Booker, Autumn R

List Source: Eurofins St. Louis
List Creation: 03/02/23 12:00 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/22/2023 1:32:14 PM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall 018 - Grab

JOB NUMBER

570-129850-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Eurofins Calscience

Job Notes

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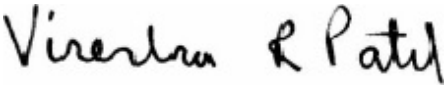
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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3/22/2023 1:32:14 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-129850-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grat

Qualifiers

General Chemistry

Qualifier	Qualifier Description
BU	Analyzed out of holding time
BV	Sample received after holding time expired

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129850-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129850-1

Comments
No additional comments.

Receipt
The samples were received on 3/6/2023 5:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.6º C.

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-309627.The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method SM 2540F: The following sample was received outside of holding time: Outfall018_20230304_Grab (570-129850-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 1664A: The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-310236.
Method: 1664.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129850-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grab

Client Sample ID: Outfall018_20230304_Grab
Lab Sample ID: 570-129850-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	410		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA

Client Sample ID: TB-20230304
Lab Sample ID: 570-129850-3

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: Outfall018_20230304_Grab **Lab Sample ID: 570-129850-1**
Date Collected: 03/04/23 08:20 **Matrix: Water**
Date Received: 03/06/23 17:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/07/23 17:24	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/07/23 17:24	1
Trichloroethene	ND		0.50	0.17	ug/L			03/07/23 17:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*60 - 140*		*03/07/23 17:24*	*1*
Toluene-d8 (Surr)	*100*		*60 - 140*		*03/07/23 17:24*	*1*
Dibromofluoromethane (Surr)	*91*		*60 - 140*		*03/07/23 17:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*60 - 140*		*03/07/23 17:24*	*1*

Client Sample ID: TB-20230304 **Lab Sample ID: 570-129850-3**
Date Collected: 03/04/23 08:20 **Matrix: Water**
Date Received: 03/06/23 17:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/07/23 15:55	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/07/23 15:55	1
Trichloroethene	ND		0.50	0.17	ug/L			03/07/23 15:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*60 - 140*		*03/07/23 15:55*	*1*
Toluene-d8 (Surr)	*101*		*60 - 140*		*03/07/23 15:55*	*1*
Dibromofluoromethane (Surr)	*92*		*60 - 140*		*03/07/23 15:55*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*60 - 140*		*03/07/23 15:55*	*1*

General Chemistry

Client Sample ID: Outfall018_20230304_Grab **Lab Sample ID: 570-129850-1**
Date Collected: 03/04/23 08:20 **Matrix: Water**
Date Received: 03/06/23 17:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	ND		0.99	0.50	mg/L		03/09/23 10:10	03/10/23 07:51	1
Specific Conductance (SM 2510B)	**410**		1.0	1.0	umhos/cm			03/17/23 16:49	1
Settleable Solids (SM 2540F)	ND	BU BV	0.10	0.10	mL/L			03/07/23 13:34	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129850-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grab

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	TOL	DBFM	DCA
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-129850-1	Outfall018_20230304_Grab	97	100	91	88
570-129850-3	TB-20230304	95	101	92	86
LCS 570-309627/1003	Lab Control Sample	99	98	95	97
LCSD 570-309627/4	Lab Control Sample Dup	97	99	92	96
MB 570-309627/6	Method Blank	95	98	92	90

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-309627/6
Matrix: Water
Analysis Batch: 309627

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/07/23 15:33	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/07/23 15:33	1
Trichloroethene	ND		0.50	0.17	ug/L			03/07/23 15:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*60 - 140*		*03/07/23 15:33*	*1*
Toluene-d8 (Surr)	*98*		*60 - 140*		*03/07/23 15:33*	*1*
Dibromofluoromethane (Surr)	*92*		*60 - 140*		*03/07/23 15:33*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*60 - 140*		*03/07/23 15:33*	*1*

Lab Sample ID: LCS 570-309627/1003
Matrix: Water
Analysis Batch: 309627

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1-Dichloroethene			10.0	10.1		ug/L		101	50 - 150		
1,2-Dichloroethane			10.0	9.51		ug/L		95	70 - 130		
Trichloroethene			10.0	10.1		ug/L		101	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*60 - 140*
Toluene-d8 (Surr)	*98*		*60 - 140*
Dibromofluoromethane (Surr)	*95*		*60 - 140*
1,2-Dichloroethane-d4 (Surr)	*97*		*60 - 140*

Lab Sample ID: LCSD 570-309627/4
Matrix: Water
Analysis Batch: 309627

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene			10.0	10.3		ug/L		103	50 - 150	2	32
1,2-Dichloroethane			10.0	9.21		ug/L		92	70 - 130	3	49
Trichloroethene			10.0	10.5		ug/L		105	65 - 135	4	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*60 - 140*
Toluene-d8 (Surr)	*99*		*60 - 140*
Dibromofluoromethane (Surr)	*92*		*60 - 140*
1,2-Dichloroethane-d4 (Surr)	*96*		*60 - 140*

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-310236/1-A
Matrix: Water
Analysis Batch: 310507

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 310236

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		1.0	0.51	mg/L		03/09/23 10:10	03/10/23 07:51	1

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: LCS 570-310236/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 310507 **Prep Batch: 310236**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
HEM (Oil & Grease)			40.0	37.3		mg/L		93	78 - 114		

Lab Sample ID: LCSD 570-310236/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 310507 **Prep Batch: 310236**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM (Oil & Grease)			40.0	38.7		mg/L		97	78 - 114	4	18

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129850-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grab

GC/MS VOA

Analysis Batch: 309627

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129850-1	Outfall018_20230304_Grab	Total/NA	Water	624.1	
570-129850-3	TB-20230304	Total/NA	Water	624.1	
MB 570-309627/6	Method Blank	Total/NA	Water	624.1	
LCS 570-309627/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-309627/4	Lab Control Sample Dup	Total/NA	Water	624.1	

General Chemistry

Analysis Batch: 309623

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129850-1	Outfall018_20230304_Grab	Total/NA	Water	SM 2540F	

Prep Batch: 310236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129850-1	Outfall018_20230304_Grab	Total/NA	Water	1664A	
MB 570-310236/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-310236/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-310236/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 310507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129850-1	Outfall018_20230304_Grab	Total/NA	Water	1664A	310236
MB 570-310236/1-A	Method Blank	Total/NA	Water	1664A	310236
LCS 570-310236/2-A	Lab Control Sample	Total/NA	Water	1664A	310236
LCSD 570-310236/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	310236

Analysis Batch: 312656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129850-1	Outfall018_20230304_Grab	Total/NA	Water	SM 2510B	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-129850-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grab

Client Sample ID: Outfall018_20230304_Grab
Lab Sample ID: 570-129850-1
Date Collected: 03/04/23 08:20
Matrix: Water
Date Received: 03/06/23 17:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	309627	03/07/23 17:24	N1A	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Prep	1664A			1014 mL	1000 mL	310236	03/09/23 10:10	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			310507	03/10/23 07:51	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									
Total/NA	Analysis	SM 2510B		1			312656	03/17/23 16:49	BDH9	EET CAL 4
	Instrument ID: COND13									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	309623	03/07/23 13:34	GG0B	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB-20230304
Lab Sample ID: 570-129850-3
Date Collected: 03/04/23 08:20
Matrix: Water
Date Received: 03/06/23 17:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	309627	03/07/23 15:55	N1A	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 570-129850-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grat

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129850-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grab

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4

Protocol References:

1664A = EPA-821-98-002

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grab

Job ID: 570-129850-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129850-1	Outfall018_20230304_Grab	Water	03/04/23 08:20	03/06/23 17:00
570-129850-3	TB-20230304	Water	03/04/23 08:20	03/06/23 17:00

129850

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

EDBPJ6UX

R R R R

Client Name/Address: Haley & Aldrich, 5333 Mission Center Rd Suite 300, San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Grab	ANALYSIS REQUIRED	Field Readings / Meter serial #
Eurofins Calscience Project Manager: Virendra Patel, 2841 Dow Avenue, Suite #100, Tustin, CA 92780, Tel: 714-895-5494, **ECI Project #57013187**	Project Manager: Katherine Miller, 520.289.8606, 520.904.6944 (cell)		Field Readings: (Include units) Time of Readings: 0820; DO 31.45 mg/L; pH 7.05 pH unit; Temp 50.6 °C/F
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.			Field readings QC Checked by: [signature] Date/Time: 3-4-2023/0820
Sampler: Adrian Mobeka	Field Manager: Mark Dominick, 978.234.5033, 818.599.0702 (cell)		

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Oil & Grease (E1664A-HEM)	VOCs - only 1,1-DCE, 1,2-DCA, TCE (E624)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Comments
Outfall 018	Outfall018_20230304_Grab	3/4/2023 0820	WM	1 L Glass Amber	2	HCl	15	No	X				
			WM	40 mL VOA	3	HCl	30	No		X			
			WM	1L Poly	1	None	70	No			X		
			WM	500 mL Poly	1	None	75	No				X	
	Outfall018_20230304_Grab_Extra	3/4/2023 0820	WM	1 L Glass Amber	2	HCl	15	No	H				Hold
			WM	40 mL VOA	3	HCl	30	No		H			Hold
			WM	500 mL Poly	1	None	75	No				H	Hold
Trip Blanks	TB-20230304	3/4/2023 0820	WQ	40 mL VOA	3	HCl	30	No		X			

570-129850 Chain of Custody

Legend: R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	3-6-2023/1355	H&A	[signature]	3/6/23 1355 EC
[signature]	3/6/23 1700	EC	[signature]	3/6/23 1700

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

2.6/2.6 SC11

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129850-1

Login Number: 129850
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/22/2023 6:34:30 PM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall 018 - Comp

JOB NUMBER

570-129968-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Eurofins Calscience

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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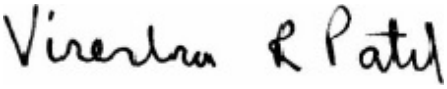

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Authorized for release by
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Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-1

Qualifiers

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)
LQ	LCS/LCSD recovery above method control limits

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129968-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129968-1

Receipt
The samples were received on 3/6/2023 5:00 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7°C, 1.8°C and 2.1°C

Receipt Exceptions
The reference method requires samples to have a pH of <2. The following samples were received with a pH of 7: <Affected Samples>. The samples were adjusted to the appropriate pH in the laboratory.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Pesticides
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 245.1: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 570-309760 and analytical batch 570-310041 recovered outside control limits for Mercury . These analytes were biased high in the LCS/LCSD and were not detected in the associated samples; therefore, the data have been reported.

Method 245.1: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-309760 and analytical batch 570-310041 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 245.1: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 570-309760 and analytical batch 570-310041 recovered outside control limits for Mercury . These analytes were biased high in the LCS/LCSD and were not detected in the associated samples; therefore, the data have been reported.

Method 245.1: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-309760 and analytical batch 570-310041 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
Method Kelada_01: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 570-312131 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-1

Client Sample ID: Outfall018_20230305_Comp — Lab Sample ID: 570-129968-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.6		1.0	0.36	mg/L	1		300.0	Total/NA
Nitrate as N	0.31		0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate	88		1.0	0.24	mg/L	1		300.0	Total/NA
Nitrate Nitrite as N	0.31		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Copper	1.6	J,DX	2.0	0.32	ug/L	1		200.8	Total Recoverable
Selenium	0.63	J,DX	2.0	0.52	ug/L	1		200.8	Total Recoverable
Turbidity	0.40		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Dissolved Solids	240		10	8.7	mg/L	1		SM 2540C	Total/NA
Biochemical Oxygen Demand	1.5	J,DX	2.0	1.0	mg/L	1		SM 5210B	Total/NA
MBAS	0.052	J,DX	0.20	0.050	mg/L	1		SM 5540C	Total/NA

Client Sample ID: Outfall018_20230305_Comp_F — Lab Sample ID: 570-129968-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	1.7	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.13	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-1

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: Outfall018_20230305_Comp
Date Collected: 03/05/23 07:55
Date Received: 03/06/23 17:00

Lab Sample ID: 570-129968-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		0.95	0.13	ug/L		03/10/23 06:36	03/13/23 21:52	1
2,4-Dinitrotoluene	ND		0.19	0.11	ug/L		03/10/23 06:36	03/13/23 21:52	1
Bis(2-ethylhexyl) phthalate	ND		4.8	3.4	ug/L		03/10/23 06:36	03/13/23 21:52	1
N-Nitrosodimethylamine	ND		0.19	0.18	ug/L		03/10/23 06:36	03/13/23 21:52	1
Pentachlorophenol	ND		0.95	0.81	ug/L		03/10/23 06:36	03/13/23 21:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*57*		*31 - 120*	*03/10/23 06:36*	*03/13/23 21:52*	*1*
Phenol-d6 (Surr)	*21*		*10 - 120*	*03/10/23 06:36*	*03/13/23 21:52*	*1*
p-Terphenyl-d14 (Surr)	*66*		*45 - 120*	*03/10/23 06:36*	*03/13/23 21:52*	*1*
2,4,6-Tribromophenol	*78*		*28 - 127*	*03/10/23 06:36*	*03/13/23 21:52*	*1*
2-Fluorophenol	*32*		*17 - 120*	*03/10/23 06:36*	*03/13/23 21:52*	*1*
Nitrobenzene-d5	*63*		*27 - 120*	*03/10/23 06:36*	*03/13/23 21:52*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-1

Method: EPA 608.3 - Organochlorine Pesticides in Water

Client Sample ID: Outfall018_20230305_Comp
Date Collected: 03/05/23 07:55
Date Received: 03/06/23 17:00

Lab Sample ID: 570-129968-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		03/08/23 08:21	03/13/23 21:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*56*		*20 - 139*	*03/08/23 08:21*	*03/13/23 21:05*	*1*
DCB Decachlorobiphenyl (Surr)	*42*		*20 - 154*	*03/08/23 08:21*	*03/13/23 21:05*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-1

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: Outfall018_20230305_Comp
Date Collected: 03/05/23 07:55
Date Received: 03/06/23 17:00

Lab Sample ID: 570-129968-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**6.6**		1.0	0.36	mg/L			03/07/23 05:53	1
Nitrite as N	ND		0.10	0.043	mg/L			03/07/23 05:53	1
Nitrate as N	**0.31**		0.10	0.020	mg/L			03/07/23 05:53	1
Sulfate	**88**		1.0	0.24	mg/L			03/07/23 05:53	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-1

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: Outfall018_20230305_Comp
Date Collected: 03/05/23 07:55
Date Received: 03/06/23 17:00

Lab Sample ID: 570-129968-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/09/23 17:42	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-1

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: Outfall018_20230305_Comp
Date Collected: 03/05/23 07:55
Date Received: 03/06/23 17:00

Lab Sample ID: 570-129968-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	0.31		0.10	0.020	mg/L			03/10/23 16:06	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: Outfall018_20230305_Comp
Date Collected: 03/05/23 07:55
Date Received: 03/06/23 17:00

Lab Sample ID: 570-129968-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		03/07/23 08:45	03/07/23 14:04	1
Copper	**1.6**	**J,DX**	2.0	0.32	ug/L		03/07/23 08:45	03/07/23 14:04	1
Lead	ND		1.0	0.12	ug/L		03/07/23 08:45	03/07/23 14:04	1
Selenium	**0.63**	**J,DX**	2.0	0.52	ug/L		03/07/23 08:45	03/07/23 14:04	1
Zinc	ND		20	2.8	ug/L		03/07/23 08:45	03/07/23 14:04	1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: Outfall018_20230305_Comp_F
Lab Sample ID: 570-129968-3
Date Collected: 03/05/23 07:55
Matrix: Water
Date Received: 03/06/23 17:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			03/08/23 10:22	1
Copper	**1.7**	**J,DX BU**	2.0	0.32	ug/L			03/08/23 10:22	1
Lead	**0.13**	**J,DX BU**	1.0	0.12	ug/L			03/08/23 10:22	1
Selenium	ND	BU	2.0	0.52	ug/L			03/08/23 10:22	1
Zinc	ND	BU	20	2.8	ug/L			03/08/23 10:22	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-1

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: Outfall018_20230305_Comp
Date Collected: 03/05/23 07:55
Date Received: 03/06/23 17:00

Lab Sample ID: 570-129968-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	LQ	0.20	0.12	ug/L		03/07/23 21:21	03/08/23 17:23	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-1

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: Outfall018_20230305_Comp_F
Date Collected: 03/05/23 07:55
Date Received: 03/06/23 17:00

Lab Sample ID: 570-129968-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	BU	0.20	0.12	ug/L		03/06/23 18:07	03/07/23 14:10	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-1

General Chemistry

Client Sample ID: Outfall018_20230305_Comp
Date Collected: 03/05/23 07:55
Date Received: 03/06/23 17:00

Lab Sample ID: 570-129968-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	ND		0.075	0.032	mg/L		03/13/23 13:40	03/13/23 15:30	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			03/14/23 19:36	1
Turbidity (SM 2130B)	**0.40**		0.05	0.05	NTU			03/06/23 22:15	1
Total Dissolved Solids (SM 2540C)	**240**		10	8.7	mg/L			03/09/23 18:06	1
Total Suspended Solids (SM 2540D)	ND		1.0	0.83	mg/L			03/09/23 11:52	1
Biochemical Oxygen Demand (SM 5210B)	**1.5**	**J,DX**	2.0	1.0	mg/L		03/06/23 18:22	03/06/23 19:19	1
MBAS (SM 5540C)	**0.052**	**J,DX**	0.20	0.050	mg/L		03/06/23 20:15	03/06/23 21:09	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	FBP (31-120)	PHL6 (10-120)	TPHd14 (45-120)	TBP (28-127)	2FP (17-120)	NBZ (27-120)
570-129968-1	Outfall018_20230305_Comp	57	21	66	78	32	63
LCS 570-310496/2-A	Lab Control Sample	80	34	92	90	51	73
LCSD 570-310496/3-A	Lab Control Sample Dup	73	33	86	87	47	68
MB 570-310496/1-A	Method Blank	64	27	82	63	41	68

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	TCX1 (20-139)	DCB1 (20-154)
570-129968-1	Outfall018_20230305_Comp	56	42
LCS 570-309827/2-A	Lab Control Sample	67	90
LCSD 570-309827/3-A	Lab Control Sample Dup	63	87
MB 570-309827/1-A	Method Blank	43	67

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-310496/1-A
Matrix: Water
Analysis Batch: 311097

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 310496

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		03/10/23 06:36	03/13/23 19:26	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		03/10/23 06:36	03/13/23 19:26	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		03/10/23 06:36	03/13/23 19:26	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		03/10/23 06:36	03/13/23 19:26	1
Pentachlorophenol	ND		1.0	0.84	ug/L		03/10/23 06:36	03/13/23 19:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*64*		*31 - 120*	*03/10/23 06:36*	*03/13/23 19:26*	*1*
Phenol-d6 (Surr)	*27*		*10 - 120*	*03/10/23 06:36*	*03/13/23 19:26*	*1*
p-Terphenyl-d14 (Surr)	*82*		*45 - 120*	*03/10/23 06:36*	*03/13/23 19:26*	*1*
2,4,6-Tribromophenol	*63*		*28 - 127*	*03/10/23 06:36*	*03/13/23 19:26*	*1*
2-Fluorophenol	*41*		*17 - 120*	*03/10/23 06:36*	*03/13/23 19:26*	*1*
Nitrobenzene-d5	*68*		*27 - 120*	*03/10/23 06:36*	*03/13/23 19:26*	*1*

Lab Sample ID: LCS 570-310496/2-A
Matrix: Water
Analysis Batch: 311097

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 310496

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4,6-Trichlorophenol	20.0	18.4		ug/L		92	52 - 129
2,4-Dinitrotoluene	20.0	21.4		ug/L		107	48 - 127
Bis(2-ethylhexyl) phthalate	20.0	20.6		ug/L		103	29 - 137
N-Nitrosodimethylamine	20.0	11.2		ug/L		56	20 - 120
Pentachlorophenol	20.0	10.5		ug/L		53	38 - 152

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*80*		*31 - 120*
Phenol-d6 (Surr)	*34*		*10 - 120*
p-Terphenyl-d14 (Surr)	*92*		*45 - 120*
2,4,6-Tribromophenol	*90*		*28 - 127*
2-Fluorophenol	*51*		*17 - 120*
Nitrobenzene-d5	*73*		*27 - 120*

Lab Sample ID: LCSD 570-310496/3-A
Matrix: Water
Analysis Batch: 311097

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 310496

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4,6-Trichlorophenol	20.0	17.0		ug/L		85	52 - 129	8	35
2,4-Dinitrotoluene	20.0	20.3		ug/L		102	48 - 127	5	25
Bis(2-ethylhexyl) phthalate	20.0	19.3		ug/L		97	29 - 137	6	50
N-Nitrosodimethylamine	20.0	10.5		ug/L		52	20 - 120	7	21
Pentachlorophenol	20.0	10.2		ug/L		51	38 - 152	3	52

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*73*		*31 - 120*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-310496/3-A
Matrix: Water
Analysis Batch: 311097

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 310496

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Phenol-d6 (Surr)	*33*		*10 - 120*
p-Terphenyl-d14 (Surr)	*86*		*45 - 120*
2,4,6-Tribromophenol	*87*		*28 - 127*
2-Fluorophenol	*47*		*17 - 120*
Nitrobenzene-d5	*68*		*27 - 120*

Method: 608.3 - Organochlorine Pesticides in Water

Lab Sample ID: MB 570-309827/1-A
Matrix: Water
Analysis Batch: 310461

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 309827

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		03/08/23 08:21	03/10/23 15:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*43*		*20 - 139*	*03/08/23 08:21*	*03/10/23 15:28*	*1*
DCB Decachlorobiphenyl (Surr)	*67*		*20 - 154*	*03/08/23 08:21*	*03/10/23 15:28*	*1*

Lab Sample ID: LCS 570-309827/2-A
Matrix: Water
Analysis Batch: 311052

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 309827

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
alpha-BHC			0.0333	0.0242		ug/L		72	37 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*67*		*20 - 139*
DCB Decachlorobiphenyl (Surr)	*90*		*20 - 154*

Lab Sample ID: LCSD 570-309827/3-A
Matrix: Water
Analysis Batch: 311052

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 309827

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
alpha-BHC			0.0333	0.0242		ug/L		73	37 - 140	0	36

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*63*		*20 - 139*
DCB Decachlorobiphenyl (Surr)	*87*		*20 - 154*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-309420/5
Matrix: Water
Analysis Batch: 309420

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			03/07/23 03:09	1
Sulfate	ND		1.0	0.24	mg/L			03/07/23 03:09	1

Lab Sample ID: LCS 570-309420/6
Matrix: Water
Analysis Batch: 309420

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	48.3		mg/L		97	90 - 110
Sulfate	50.0	49.1		mg/L		98	90 - 110

Lab Sample ID: LCSD 570-309420/7
Matrix: Water
Analysis Batch: 309420

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	48.3		mg/L		97	90 - 110	0	15
Sulfate	50.0	49.1		mg/L		98	90 - 110	0	15

Lab Sample ID: MB 570-309421/5
Matrix: Water
Analysis Batch: 309421

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			03/07/23 03:09	1
Nitrate as N	ND		0.10	0.020	mg/L			03/07/23 03:09	1

Lab Sample ID: LCS 570-309421/6
Matrix: Water
Analysis Batch: 309421

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.50		mg/L		100	90 - 110
Nitrate as N	5.00	4.91		mg/L		98	90 - 110

Lab Sample ID: LCSD 570-309421/7
Matrix: Water
Analysis Batch: 309421

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.51		mg/L		100	90 - 110	0	15
Nitrate as N	5.00	4.92		mg/L		98	90 - 110	0	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-310301/7
Matrix: Water
Analysis Batch: 310301

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/09/23 16:18	1

Lab Sample ID: LCS 570-310301/8
Matrix: Water
Analysis Batch: 310301

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	25.3		ug/L		101	85 - 115

Lab Sample ID: LCSD 570-310301/9
Matrix: Water
Analysis Batch: 310301

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	24.9		ug/L		100	85 - 115	2	15

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-309486/1-A
Matrix: Water
Analysis Batch: 309658

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 309486

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		03/07/23 08:45	03/07/23 13:25	1
Copper	ND		2.0	0.32	ug/L		03/07/23 08:45	03/07/23 13:25	1
Lead	ND		1.0	0.12	ug/L		03/07/23 08:45	03/07/23 13:25	1
Selenium	ND		2.0	0.52	ug/L		03/07/23 08:45	03/07/23 13:25	1
Zinc	ND		20	2.8	ug/L		03/07/23 08:45	03/07/23 13:25	1

Lab Sample ID: LCS 570-309486/2-A
Matrix: Water
Analysis Batch: 309658

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 309486

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	76.5		ug/L		96	85 - 115
Copper	80.0	74.8		ug/L		93	85 - 115
Lead	80.0	76.7		ug/L		96	85 - 115
Selenium	80.0	78.4		ug/L		98	85 - 115
Zinc	80.0	74.7		ug/L		93	85 - 115

Lab Sample ID: LCSD 570-309486/3-A
Matrix: Water
Analysis Batch: 309658

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 309486

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	77.2		ug/L		96	85 - 115	1	20
Copper	80.0	74.9		ug/L		94	85 - 115	0	20
Lead	80.0	75.7		ug/L		95	85 - 115	1	20
Selenium	80.0	80.0		ug/L		100	85 - 115	2	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-309486/3-A
Matrix: Water
Analysis Batch: 309658

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 309486

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Zinc			80.0	73.6		ug/L		92	85 - 115	2	20

Lab Sample ID: 570-129968-1 MS
Matrix: Water
Analysis Batch: 309658

Client Sample ID: Outfall018_20230305_Comp
Prep Type: Total Recoverable
Prep Batch: 309486

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND		80.0	76.1		ug/L		95	80 - 120
Copper	1.6	J,DX	80.0	74.8		ug/L		92	80 - 120
Lead	ND		80.0	75.0		ug/L		94	80 - 120
Selenium	0.63	J,DX	80.0	78.9		ug/L		98	80 - 120
Zinc	ND		80.0	74.0		ug/L		93	80 - 120

Lab Sample ID: 570-129968-1 MSD
Matrix: Water
Analysis Batch: 309658

Client Sample ID: Outfall018_20230305_Comp
Prep Type: Total Recoverable
Prep Batch: 309486

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND		80.0	76.7		ug/L		96	80 - 120	1	20
Copper	1.6	J,DX	80.0	76.7		ug/L		94	80 - 120	2	20
Lead	ND		80.0	75.4		ug/L		94	80 - 120	0	20
Selenium	0.63	J,DX	80.0	79.1		ug/L		98	80 - 120	0	20
Zinc	ND		80.0	75.5		ug/L		94	80 - 120	2	20

Lab Sample ID: MB 570-309651/1-A
Matrix: Water
Analysis Batch: 309903

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L			03/08/23 09:45	1
Copper	ND		2.0	0.32	ug/L			03/08/23 09:45	1
Lead	ND		1.0	0.12	ug/L			03/08/23 09:45	1
Selenium	ND		2.0	0.52	ug/L			03/08/23 09:45	1
Zinc	ND		20	2.8	ug/L			03/08/23 09:45	1

Lab Sample ID: LCS 570-309651/2-A
Matrix: Water
Analysis Batch: 309903

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium			80.0	80.5		ug/L		101	85 - 115
Copper			80.0	78.8		ug/L		98	85 - 115
Lead			80.0	79.5		ug/L		99	85 - 115
Selenium			80.0	81.4		ug/L		102	85 - 115
Zinc			80.0	78.2		ug/L		98	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-309651/3-A
Matrix: Water
Analysis Batch: 309903

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium			80.0	79.9		ug/L		100	85 - 115	1	20
Copper			80.0	79.7		ug/L		100	85 - 115	1	20
Lead			80.0	79.7		ug/L		100	85 - 115	0	20
Selenium			80.0	82.5		ug/L		103	85 - 115	1	20
Zinc			80.0	78.9		ug/L		99	85 - 115	1	20

Lab Sample ID: 570-129968-3 MS
Matrix: Water
Analysis Batch: 309903

Client Sample ID: Outfall018_20230305_Comp_F
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND	BU	80.0	74.6	BU	ug/L		93	80 - 120
Copper	1.7	J,DX BU	80.0	74.8	BU	ug/L		91	80 - 120
Lead	0.13	J,DX BU	80.0	72.6	BU	ug/L		91	80 - 120
Selenium	ND	BU	80.0	78.7	BU	ug/L		98	80 - 120
Zinc	ND	BU	80.0	74.1	BU	ug/L		93	80 - 120

Lab Sample ID: 570-129968-3 MSD
Matrix: Water
Analysis Batch: 309903

Client Sample ID: Outfall018_20230305_Comp_F
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND	BU	80.0	74.5	BU	ug/L		93	80 - 120	0	20
Copper	1.7	J,DX BU	80.0	77.6	BU	ug/L		95	80 - 120	4	20
Lead	0.13	J,DX BU	80.0	73.3	BU	ug/L		91	80 - 120	1	20
Selenium	ND	BU	80.0	78.8	BU	ug/L		98	80 - 120	0	20
Zinc	ND	BU	80.0	74.5	BU	ug/L		93	80 - 120	1	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-309760/1-A
Matrix: Water
Analysis Batch: 310041

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 309760

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/07/23 21:21	03/08/23 17:06	1

Lab Sample ID: LCS 570-309760/2-A
Matrix: Water
Analysis Batch: 310041

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 309760

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury			8.00	9.39	LQ	ug/L		117	85 - 115

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: LCSD 570-309760/3-A
Matrix: Water
Analysis Batch: 310041

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 309760

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			8.00	9.54	LQ	ug/L		119	85 - 115	2	10

Lab Sample ID: 570-129968-1 MS
Matrix: Water
Analysis Batch: 310041

Client Sample ID: Outfall018_20230305_Comp
Prep Type: Total/NA
Prep Batch: 309760

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	ND	LQ	8.00	9.31	LM	ug/L		116	85 - 115		

Lab Sample ID: 570-129968-1 MSD
Matrix: Water
Analysis Batch: 310041

Client Sample ID: Outfall018_20230305_Comp
Prep Type: Total/NA
Prep Batch: 309760

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND	LQ	8.00	9.51	LM	ug/L		119	85 - 115	2	10

Lab Sample ID: MB 570-309367/1-B
Matrix: Water
Analysis Batch: 309665

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 309368

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/06/23 18:07	03/07/23 13:11	1

Lab Sample ID: LCS 570-309367/2-B
Matrix: Water
Analysis Batch: 309665

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 309368

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			8.00	8.47		ug/L		106	85 - 115		

Lab Sample ID: LCSD 570-309367/3-B
Matrix: Water
Analysis Batch: 309665

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 309368

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			8.00	8.40		ug/L		105	85 - 115	1	10

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-311129/5-A
Matrix: Water
Analysis Batch: 311145

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 311129

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		03/13/23 13:40	03/13/23 15:19	1

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: LCS 570-311129/6-A
Matrix: Water
Analysis Batch: 311145

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 311129

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	0.500	0.518		mg/L		104	90 - 110

Lab Sample ID: LCSD 570-311129/7-A
Matrix: Water
Analysis Batch: 311145

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 311129

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	0.500	0.498		mg/L		100	90 - 110	4	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-312131/14
Matrix: Water
Analysis Batch: 312131

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			03/14/23 19:36	1

Lab Sample ID: LCS 570-312131/16
Matrix: Water
Analysis Batch: 312131

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	252		ug/L		101	90 - 110

Lab Sample ID: LCSD 570-312131/17
Matrix: Water
Analysis Batch: 312131

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	250	266		ug/L		107	90 - 110	5	20

Lab Sample ID: MRL 570-312131/13
Matrix: Water
Analysis Batch: 312131

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	6.06		ug/L		121	50 - 150

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-309398/1
Matrix: Water
Analysis Batch: 309398

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	1000	1000		NTU		100.7	99.0 - 101.0

Method: SM 2130B - Turbidity (Continued)

Lab Sample ID: LCSSRM 570-309398/2
Matrix: Water
Analysis Batch: 309398

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	10.0	10		NTU		101.0	99.0 - 101.0

Lab Sample ID: LCSSRM 570-309398/3
Matrix: Water
Analysis Batch: 309398

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-310437/1
Matrix: Water
Analysis Batch: 310437

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			03/09/23 18:06	1

Lab Sample ID: LCS 570-310437/2
Matrix: Water
Analysis Batch: 310437

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	952		mg/L		95	84 - 108

Lab Sample ID: LCSD 570-310437/3
Matrix: Water
Analysis Batch: 310437

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	982		mg/L		98	84 - 108	3	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-310278/1
Matrix: Water
Analysis Batch: 310278

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			03/09/23 11:52	1

Lab Sample ID: LCS 570-310278/2
Matrix: Water
Analysis Batch: 310278

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	97.0		mg/L		97	77 - 116

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCSD 570-310278/3
Matrix: Water
Analysis Batch: 310278

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	96.0		mg/L		96	77 - 116	1	10

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: LCS 570-309249/2-A
Matrix: Water
Analysis Batch: 310874

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 309249

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Biochemical Oxygen Demand			199	205		mg/L		103	84.6 - 115.4		

Lab Sample ID: USB 570-310874/2
Matrix: Water
Analysis Batch: 310874

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L			03/06/23 13:17	1

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-309394/5-A
Matrix: Water
Analysis Batch: 309397

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 309394

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.20	0.050	mg/L		03/06/23 20:15	03/06/23 21:03	1

Lab Sample ID: LCS 570-309394/6-A
Matrix: Water
Analysis Batch: 309397

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 309394

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
MBAS			0.500	0.432		mg/L		86	83 - 122		

Lab Sample ID: LCSD 570-309394/7-A
Matrix: Water
Analysis Batch: 309397

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 309394

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS			0.500	0.446		mg/L		89	83 - 122	3	10

GC/MS Semi VOA

Prep Batch: 310496

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	625	
MB 570-310496/1-A	Method Blank	Total/NA	Water	625	
LCS 570-310496/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-310496/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 311097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	625.1 SIM	310496
MB 570-310496/1-A	Method Blank	Total/NA	Water	625.1 SIM	310496
LCS 570-310496/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	310496
LCSD 570-310496/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	310496

GC Semi VOA

Prep Batch: 309827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	608	
MB 570-309827/1-A	Method Blank	Total/NA	Water	608	
LCS 570-309827/2-A	Lab Control Sample	Total/NA	Water	608	
LCSD 570-309827/3-A	Lab Control Sample Dup	Total/NA	Water	608	

Analysis Batch: 310461

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-309827/1-A	Method Blank	Total/NA	Water	608.3	309827

Analysis Batch: 311052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	608.3	309827
LCS 570-309827/2-A	Lab Control Sample	Total/NA	Water	608.3	309827
LCSD 570-309827/3-A	Lab Control Sample Dup	Total/NA	Water	608.3	309827

HPLC/IC

Analysis Batch: 309420

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	300.0	
MB 570-309420/5	Method Blank	Total/NA	Water	300.0	
LCS 570-309420/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-309420/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 309421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	300.0	
MB 570-309421/5	Method Blank	Total/NA	Water	300.0	
LCS 570-309421/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-309421/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 310301

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	314.0	
MB 570-310301/7	Method Blank	Total/NA	Water	314.0	

HPLC/IC (Continued)

Analysis Batch: 310301 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-310301/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-310301/9	Lab Control Sample Dup	Total/NA	Water	314.0	

Analysis Batch: 310704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	NO2NO3 Calc	

Metals

Filtration Batch: 309367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-3	Outfall018_20230305_Comp_F	Dissolved	Water	Filtration	
MB 570-309367/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-309367/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-309367/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	

Prep Batch: 309368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-3	Outfall018_20230305_Comp_F	Dissolved	Water	245.1	309367
MB 570-309367/1-B	Method Blank	Dissolved	Water	245.1	309367
LCS 570-309367/2-B	Lab Control Sample	Dissolved	Water	245.1	309367
LCSD 570-309367/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	309367

Prep Batch: 309486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total Recoverable	Water	200.8	
MB 570-309486/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-309486/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-309486/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-129968-1 MS	Outfall018_20230305_Comp	Total Recoverable	Water	200.8	
570-129968-1 MSD	Outfall018_20230305_Comp	Total Recoverable	Water	200.8	

Filtration Batch: 309651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-3	Outfall018_20230305_Comp_F	Dissolved	Water	Filtration	
MB 570-309651/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-309651/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-309651/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-129968-3 MS	Outfall018_20230305_Comp_F	Dissolved	Water	Filtration	
570-129968-3 MSD	Outfall018_20230305_Comp_F	Dissolved	Water	Filtration	

Analysis Batch: 309658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total Recoverable	Water	200.8	309486
MB 570-309486/1-A	Method Blank	Total Recoverable	Water	200.8	309486
LCS 570-309486/2-A	Lab Control Sample	Total Recoverable	Water	200.8	309486
LCSD 570-309486/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	309486
570-129968-1 MS	Outfall018_20230305_Comp	Total Recoverable	Water	200.8	309486
570-129968-1 MSD	Outfall018_20230305_Comp	Total Recoverable	Water	200.8	309486

Metals

Analysis Batch: 309665

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-3	Outfall018_20230305_Comp_F	Dissolved	Water	245.1	309368
MB 570-309367/1-B	Method Blank	Dissolved	Water	245.1	309368
LCS 570-309367/2-B	Lab Control Sample	Dissolved	Water	245.1	309368
LCSD 570-309367/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	309368

Prep Batch: 309760

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	245.1	
MB 570-309760/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-309760/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-309760/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
570-129968-1 MS	Outfall018_20230305_Comp	Total/NA	Water	245.1	
570-129968-1 MSD	Outfall018_20230305_Comp	Total/NA	Water	245.1	

Analysis Batch: 309903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-3	Outfall018_20230305_Comp_F	Dissolved	Water	200.8	309651
MB 570-309651/1-A	Method Blank	Dissolved	Water	200.8	309651
LCS 570-309651/2-A	Lab Control Sample	Dissolved	Water	200.8	309651
LCSD 570-309651/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	309651
570-129968-3 MS	Outfall018_20230305_Comp_F	Dissolved	Water	200.8	309651
570-129968-3 MSD	Outfall018_20230305_Comp_F	Dissolved	Water	200.8	309651

Analysis Batch: 310041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	245.1	309760
MB 570-309760/1-A	Method Blank	Total/NA	Water	245.1	309760
LCS 570-309760/2-A	Lab Control Sample	Total/NA	Water	245.1	309760
LCSD 570-309760/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	309760
570-129968-1 MS	Outfall018_20230305_Comp	Total/NA	Water	245.1	309760
570-129968-1 MSD	Outfall018_20230305_Comp	Total/NA	Water	245.1	309760

General Chemistry

Prep Batch: 309249

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	BOD Prep	
LCS 570-309249/2-A	Lab Control Sample	Total/NA	Water	BOD Prep	

Prep Batch: 309394

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	SM 5540C	
MB 570-309394/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-309394/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-309394/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	

Analysis Batch: 309397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	SM 5540C	309394
MB 570-309394/5-A	Method Blank	Total/NA	Water	SM 5540C	309394

General Chemistry (Continued)

Analysis Batch: 309397 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-309394/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	309394
LCSD 570-309394/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	309394

Analysis Batch: 309398

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	SM 2130B	
LCSSRM 570-309398/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-309398/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-309398/3	Lab Control Sample	Total/NA	Water	SM 2130B	

Analysis Batch: 310278

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	SM 2540D	
MB 570-310278/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-310278/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-310278/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 310437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	SM 2540C	
MB 570-310437/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-310437/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-310437/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 310874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	SM 5210B	309249
USB 570-310874/2	Method Blank	Total/NA	Water	SM 5210B	
LCS 570-309249/2-A	Lab Control Sample	Total/NA	Water	SM 5210B	309249

Prep Batch: 311129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	Distill/Ammonia	
MB 570-311129/5-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-311129/6-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-311129/7-A	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 311145

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	350.1	311129
MB 570-311129/5-A	Method Blank	Total/NA	Water	350.1	311129
LCS 570-311129/6-A	Lab Control Sample	Total/NA	Water	350.1	311129
LCSD 570-311129/7-A	Lab Control Sample Dup	Total/NA	Water	350.1	311129

Analysis Batch: 312131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	Kelada 01	
MB 570-312131/14	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-312131/16	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-312131/17	Lab Control Sample Dup	Total/NA	Water	Kelada 01	

Client: Haley & Aldrich, Inc.
Job ID: 570-129968-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

General Chemistry (Continued)

Analysis Batch: 312131 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MRL 570-312131/13	Lab Control Sample	Total/NA	Water	Kelada 01	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-1

Client Sample ID: Outfall018_20230305_Comp

Date Collected: 03/05/23 07:55
Date Received: 03/06/23 17:00

Lab Sample ID: 570-129968-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			1048.7 mL	2 mL	310496	03/10/23 06:36	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	311097	03/13/23 21:52	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Prep	608			1500 mL	1 mL	309827	03/08/23 08:21	OAJ3	EET CAL 4
Total/NA	Analysis	608.3		1	1 mL	1 mL	311052	03/13/23 21:05	N5Y3	EET CAL 4
	Instrument ID: GC52A									
Total/NA	Analysis	300.0		1	4 mL	4 mL	309420	03/07/23 05:53	PS	EET CAL 4
	Instrument ID: IC7									
Total/NA	Analysis	300.0		1	4 mL	4 mL	309421	03/07/23 05:53	PS	EET CAL 4
	Instrument ID: IC7									
Total/NA	Analysis	314.0		1	4 mL	4 mL	310301	03/09/23 17:42	PS	EET CAL 4
	Instrument ID: IC13									
Total/NA	Analysis	NO2NO3 Calc		1			310704	03/10/23 16:06	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total Recoverable	Prep	200.8			50 mL	50 mL	309486	03/07/23 08:45	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			309658	03/07/23 14:04	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Prep	245.1			25 mL	50 mL	309760	03/07/23 21:21	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			310041	03/08/23 17:23	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	311129	03/13/23 13:40	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	311145	03/13/23 15:30	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	312131	03/14/23 19:36	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			309398	03/06/23 22:15	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	310437	03/09/23 18:06	ZL7L	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	310278	03/09/23 11:52	WVA4	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Prep	BOD Prep					309249	03/06/23 18:22	U7UR	EET CAL 4
Total/NA	Analysis	SM 5210B		1	300 mL	300 mL	310874	03/06/23 19:19	TN8Z	EET CAL 4
	Instrument ID: BOD3									
Total/NA	Prep	SM 5540C			100 mL	100 mL	309394	03/06/23 20:15	TXA8	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	309397	03/06/23 21:09	TXA8	EET CAL 4
	Instrument ID: UV8									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-1

Client Sample ID: Outfall018_20230305_Comp_F

Date Collected: 03/05/23 07:55
Date Received: 03/06/23 17:00

Lab Sample ID: 570-129968-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	309651	03/07/23 14:28	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			309903	03/08/23 10:22	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	309367	03/06/23 17:48	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	309368	03/06/23 18:07	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			309665	03/07/23 14:10	C0YH	EET CAL 4
	Instrument ID: HG8									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129968-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-1

Method	Method Description	Protocol	Laboratory
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
608.3	Organochlorine Pesticides in Water	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 5210B	BOD, 5-Day	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
608	Liquid-Liquid Extraction (Separatory Funnel)	EPA	EET CAL 4
625	Liquid-Liquid Extraction	EPA	EET CAL 4
BOD Prep	Preparation, BOD	SM	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129968-1	Outfall018_20230305_Comp	Water	03/05/23 07:55	03/06/23 17:00
570-129968-3	Outfall018_20230305_Comp_F	Water	03/05/23 07:55	03/06/23 17:00

Eurofins Calscience Irvine

570-129968 Chain of Custody

CHAIN OF CUSTODY FORM

129968

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel: 714-895-5494 **ECI Project #57013187**	**Project Manager: Katherine Miller** 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Field Manager: Mark Dominick** 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

									R	R	R	R	R	R	R	R	R	R	R	C				
									ANALYSIS REQUIRED															
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl-, SO_4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	Turbidity, TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)				
Outfall 018	Outfall018_20230305_Comp	3/5/2023 0755	WM	500 mL Poly	1	HNO_3	90	Yes	X										X					
			WM	1 L Glass Amber	2	None	110	No		X														
			WM	1L Poly	1	None	115	No			X													
			WM	500 mL Poly	2	None	120	No				X												
			WM	500 mL Poly	2	None	130	No					X											48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X										48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X								
			WM	1 L Glass Amber	2	None	170	No									X							
			WM	1 L Glass Amber	2	None	180	No										X						
			WM	1L Poly	1	None	185	No							X									
	Outfall018_20230305_Comp_Extra	3/5/2023 0755	WM	1 L Glass Amber	2	None	110	No		H														Hold
			WM	500 mL Poly	2	None	120	No				H												Hold
			WM	500 mL Poly	2	None	130	No					H											Hold
			WM	1 L Glass Amber	2	None	170	No									H							Hold
			WM	1 L Glass Amber	2	None	180	No										H						Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:	
[signature]	3-6-2023 / 1355	H:A	[signature]	3/6/23	1355 EC
[signature]	3/6/23	1700 EC	[signature]	3/6/23	1700
Relinquished By	Date/Time:	Company:	Received By	Date/Time:	

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

1.7/1.7, 1.8/1.8, 2.1/2.1 SC11

2019-2020 Rainy Season
Version 4

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:	ANALYSIS REQUIRED
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp	
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel: 714-895-5494 **ECI Project #57013187**		
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R Total Dissolved Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	R Cyanide (SM4500-CN-E / E335.2)	R Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R	R Total Dissolved Metals: Mercury (E245.1)	C							
Outfall 018	Outfall018_20230305_Comp_F	3/5/2023 0755	WM	1L Poly	1	None	200	Yes	X											
			WM	borosilicate vials	1	None	320	No					X							Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230305_Comp	3/5/2023 0755	WM	500 mL Poly	1	NaOH	220	No		X										
			WM	2.5 Gal Cube	1	None	225	No			X									Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No												

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	3-6-2023 1355	H.A	[signature]	3/6/23 1355 EC
[signature]	3/6/23 1700	EC	[signature]	3/6/23 1700
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

2019-2020 Rainy Season
Version 4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-209419.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129968-1
Address: 13715 Rider Trail North,	Due Date Requested: 3/16/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email	WO #:			
Project Name: Boeing NPDES SSFL Routine Outfall 018 Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oi BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	906.0/LSC_Dist_Susp Tritium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230305_Comp (570-129968-1)	3/5/23	07:55 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	03/07/23 10 38	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

3/22/2023

ICOC No:
570-209419

Containers

Count	Container Type	Preservative

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129968-1

Login Number: 129968
List Number: 1
Creator: Cruise, Noel

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall 018 - Comp

JOB NUMBER

570-129968-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization

Virendra R Patil

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4/3/2023 2:41:25 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129968-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129968-2

Comments
No additional comments.

Receipt
The samples were received on 3/6/2023 5:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.8º C and 2.1º C.

Receipt Exceptions

The reference method requires samples to have a pH of <2. The following samples were received with a pH of 7: <Affected Samples>. The samples were adjusted to the appropriate pH in the laboratory.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 12D5 exceeded this criteria: Outfall018_20230305_Comp (570-129968-1), (CCV 320-662732/2), (LCS 320-661244/2-A), (LCSD 320-661244/3-A) and (MB 320-661244/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-2

Client Sample ID: Outfall018_20230305_Comp

Lab Sample ID: 570-129968-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.0000041	J,DX	0.000048	0.00000033	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.0000034	J,DX	0.000048	0.00000025	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.0000051	J,DX	0.000048	0.00000029	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000089	J,DX MB	0.000048	0.00000049	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000080	J,DX MB	0.000048	0.00000049	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000077	J,DX MB	0.000048	0.00000043	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000066	J,DX	0.000048	0.00000034	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000068	J,DX	0.000048	0.00000032	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000071	J,DX MB	0.000048	0.00000031	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000088	J,DX	0.000048	0.00000027	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000027	J,DX MB	0.000048	0.0000011	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000016	J,DX MB	0.000048	0.00000049	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000095	J,DX	0.000048	0.00000052	ug/L	1		1613B	Total/NA
OCDD	0.00016	MB	0.000095	0.00000065	ug/L	1		1613B	Total/NA
OCDF	0.000034	J,DX MB	0.000095	0.00000045	ug/L	1		1613B	Total/NA
Total TCDD	0.00000098	J,DX q MB	0.0000095	0.00000068	ug/L	1		1613B	Total/NA
Total TCDF	0.0000010	J,DX q	0.0000095	0.00000023	ug/L	1		1613B	Total/NA
Total PeCDD	0.0000041	J,DX	0.000048	0.00000033	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000085	J,DX	0.000048	0.00000025	ug/L	1		1613B	Total/NA
Total HxCDD	0.000026	J,DX MB	0.000048	0.00000043	ug/L	1		1613B	Total/NA
Total HxCDF	0.000030	J,DX q MB	0.000048	0.00000027	ug/L	1		1613B	Total/NA
Total HpCDD	0.000048	MB	0.000048	0.0000011	ug/L	1		1613B	Total/NA
Total HpCDF	0.000031	J,DX MB	0.000048	0.00000049	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: Outfall018_20230305_Comp
Date Collected: 03/05/23 07:55
Date Received: 03/06/23 17:00

Lab Sample ID: 570-129968-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000095	0.00000068	ug/L		03/16/23 07:03	03/23/23 04:19	1
1,2,3,7,8-PeCDD	**0.0000041**	**J,DX**	0.000048	0.00000033	ug/L		03/16/23 07:03	03/23/23 04:19	1
1,2,3,7,8-PeCDF	**0.0000034**	**J,DX**	0.000048	0.00000025	ug/L		03/16/23 07:03	03/23/23 04:19	1
2,3,4,7,8-PeCDF	**0.0000051**	**J,DX**	0.000048	0.00000029	ug/L		03/16/23 07:03	03/23/23 04:19	1
1,2,3,4,7,8-HxCDD	**0.0000089**	**J,DX MB**	0.000048	0.00000049	ug/L		03/16/23 07:03	03/23/23 04:19	1
1,2,3,6,7,8-HxCDD	**0.0000080**	**J,DX MB**	0.000048	0.00000049	ug/L		03/16/23 07:03	03/23/23 04:19	1
1,2,3,7,8,9-HxCDD	**0.0000077**	**J,DX MB**	0.000048	0.00000043	ug/L		03/16/23 07:03	03/23/23 04:19	1
1,2,3,4,7,8-HxCDF	**0.0000066**	**J,DX**	0.000048	0.00000034	ug/L		03/16/23 07:03	03/23/23 04:19	1
1,2,3,6,7,8-HxCDF	**0.0000068**	**J,DX**	0.000048	0.00000032	ug/L		03/16/23 07:03	03/23/23 04:19	1
1,2,3,7,8,9-HxCDF	**0.0000071**	**J,DX MB**	0.000048	0.00000031	ug/L		03/16/23 07:03	03/23/23 04:19	1
2,3,4,6,7,8-HxCDF	**0.0000088**	**J,DX**	0.000048	0.00000027	ug/L		03/16/23 07:03	03/23/23 04:19	1
1,2,3,4,6,7,8-HpCDD	**0.000027**	**J,DX MB**	0.000048	0.0000011	ug/L		03/16/23 07:03	03/23/23 04:19	1
1,2,3,4,6,7,8-HpCDF	**0.000016**	**J,DX MB**	0.000048	0.00000049	ug/L		03/16/23 07:03	03/23/23 04:19	1
1,2,3,4,7,8,9-HpCDF	**0.0000095**	**J,DX**	0.000048	0.00000052	ug/L		03/16/23 07:03	03/23/23 04:19	1
OCDD	**0.00016**	**MB**	0.000095	0.00000065	ug/L		03/16/23 07:03	03/23/23 04:19	1
OCDF	**0.000034**	**J,DX MB**	0.000095	0.00000045	ug/L		03/16/23 07:03	03/23/23 04:19	1
Total TCDD	**0.00000098**	**J,DX q MB**	0.0000095	0.00000068	ug/L		03/16/23 07:03	03/23/23 04:19	1
Total TCDF	**0.0000010**	**J,DX q**	0.0000095	0.00000023	ug/L		03/16/23 07:03	03/23/23 04:19	1
Total PeCDD	**0.0000041**	**J,DX**	0.000048	0.00000033	ug/L		03/16/23 07:03	03/23/23 04:19	1
Total PeCDF	**0.0000085**	**J,DX**	0.000048	0.00000025	ug/L		03/16/23 07:03	03/23/23 04:19	1
Total HxCDD	**0.000026**	**J,DX MB**	0.000048	0.00000043	ug/L		03/16/23 07:03	03/23/23 04:19	1
Total HxCDF	**0.000030**	**J,DX q MB**	0.000048	0.00000027	ug/L		03/16/23 07:03	03/23/23 04:19	1
Total HpCDD	**0.000048**	**MB**	0.000048	0.0000011	ug/L		03/16/23 07:03	03/23/23 04:19	1
Total HpCDF	**0.000031**	**J,DX MB**	0.000048	0.00000049	ug/L		03/16/23 07:03	03/23/23 04:19	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*75*		*25 - 164*	*03/16/23 07:03*	*03/23/23 04:19*	*1*
13C-2,3,7,8-TCDF	*78*		*24 - 169*	*03/16/23 07:03*	*03/23/23 04:19*	*1*
13C-1,2,3,7,8-PeCDD	*78*		*25 - 181*	*03/16/23 07:03*	*03/23/23 04:19*	*1*
13C-1,2,3,7,8-PeCDF	*82*		*24 - 185*	*03/16/23 07:03*	*03/23/23 04:19*	*1*
13C-2,3,4,7,8-PeCDF	*78*		*21 - 178*	*03/16/23 07:03*	*03/23/23 04:19*	*1*
13C-1,2,3,4,7,8-HxCDD	*70*		*32 - 141*	*03/16/23 07:03*	*03/23/23 04:19*	*1*
13C-1,2,3,6,7,8-HxCDD	*75*		*28 - 130*	*03/16/23 07:03*	*03/23/23 04:19*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: Outfall018_20230305_Comp
Lab Sample ID: 570-129968-1
Date Collected: 03/05/23 07:55
Matrix: Water
Date Received: 03/06/23 17:00

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,7,8-HxCDF	67		26 - 152	03/16/23 07:03	03/23/23 04:19	1
13C-1,2,3,6,7,8-HxCDF	79		26 - 123	03/16/23 07:03	03/23/23 04:19	1
13C-1,2,3,7,8,9-HxCDF	88		29 - 147	03/16/23 07:03	03/23/23 04:19	1
13C-2,3,4,6,7,8-HxCDF	86		28 - 136	03/16/23 07:03	03/23/23 04:19	1
13C-1,2,3,4,6,7,8-HpCDD	79		23 - 140	03/16/23 07:03	03/23/23 04:19	1
13C-1,2,3,4,6,7,8-HpCDF	72		28 - 143	03/16/23 07:03	03/23/23 04:19	1
13C-1,2,3,4,7,8,9-HpCDF	85		26 - 138	03/16/23 07:03	03/23/23 04:19	1
13C-OCDD	93		17 - 157	03/16/23 07:03	03/23/23 04:19	1
13C-OCDF	96		17 - 157	03/16/23 07:03	03/23/23 04:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	83		35 - 197	03/16/23 07:03	03/23/23 04:19	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: Outfall018_20230305_Comp
Lab Sample ID: 570-129968-1
Date Collected: 03/05/23 07:55
Matrix: Water
Date Received: 03/06/23 17:00

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.0000095	0.0000013	ug/L		03/16/23 07:03	03/28/23 13:54	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*75*		*24 - 169*	*03/16/23 07:03*	*03/28/23 13:54*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*87*		*35 - 197*	*03/16/23 07:03*	*03/28/23 13:54*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (35-197)								
570-129968-1	Outfall018_20230305_Comp	83								
570-129968-1 - RA	Outfall018_20230305_Comp	87								
MB 320-661244/1-A	Method Blank	85								

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (31-191)								
LCS 320-661244/2-A	Lab Control Sample	87								
LCSD 320-661244/3-A	Lab Control Sample Dup	82								

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water | **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-129968-1	Outfall018_20230305_Comp	75	78	78	82	78	70	75	67
570-129968-1 - RA	Outfall018_20230305_Comp		75						
MB 320-661244/1-A	Method Blank	70	73	72	76	73	66	69	61

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-129968-1	Outfall018_20230305_Comp	79	88	86	79	72	85	93	96
570-129968-1 - RA	Outfall018_20230305_Comp								
MB 320-661244/1-A	Method Blank	73	83	81	67	62	72	82	85

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water | **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-661244/2-A	Lab Control Sample	71	72	68	73	70	65	69	65
LCSD 320-661244/3-A	Lab Control Sample Dup	70	73	71	75	71	61	69	60

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-661244/2-A	Lab Control Sample	72	83	78	69	63	75	82	84
LCSD 320-661244/3-A	Lab Control Sample Dup	70	81	79	71	62	76	85	88

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129968-2
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-661244/1-A
Matrix: Water
Analysis Batch: 662732

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 661244

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000096	ug/L		03/16/23 07:03	03/22/23 23:34	1
2,3,7,8-TCDF	ND		0.000010	0.00000041	ug/L		03/16/23 07:03	03/22/23 23:34	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000049	ug/L		03/16/23 07:03	03/22/23 23:34	1
1,2,3,7,8-PeCDF	ND		0.000050	0.00000039	ug/L		03/16/23 07:03	03/22/23 23:34	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000044	ug/L		03/16/23 07:03	03/22/23 23:34	1
1,2,3,4,7,8-HxCDD	0.00000252	J,DX	0.000050	0.00000051	ug/L		03/16/23 07:03	03/22/23 23:34	1
1,2,3,6,7,8-HxCDD	0.000000678	J,DX q	0.000050	0.00000050	ug/L		03/16/23 07:03	03/22/23 23:34	1
1,2,3,7,8,9-HxCDD	0.000000887	J,DX	0.000050	0.00000045	ug/L		03/16/23 07:03	03/22/23 23:34	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.00000055	ug/L		03/16/23 07:03	03/22/23 23:34	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000049	ug/L		03/16/23 07:03	03/22/23 23:34	1
1,2,3,7,8,9-HxCDF	0.000000802	J,DX q	0.000050	0.00000048	ug/L		03/16/23 07:03	03/22/23 23:34	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.00000042	ug/L		03/16/23 07:03	03/22/23 23:34	1
1,2,3,4,6,7,8-HpCDD	0.00000970	J,DX	0.000050	0.00000055	ug/L		03/16/23 07:03	03/22/23 23:34	1
1,2,3,4,6,7,8-HpCDF	0.00000657	J,DX q	0.000050	0.00000080	ug/L		03/16/23 07:03	03/22/23 23:34	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.00000080	ug/L		03/16/23 07:03	03/22/23 23:34	1
OCDD	0.0000551	J,DX	0.00010	0.00000052	ug/L		03/16/23 07:03	03/22/23 23:34	1
OCDF	0.0000171	J,DX	0.00010	0.00000053	ug/L		03/16/23 07:03	03/22/23 23:34	1
Total TCDD	0.00000797	J,DX	0.000010	0.00000096	ug/L		03/16/23 07:03	03/22/23 23:34	1
Total TCDF	ND		0.000010	0.00000041	ug/L		03/16/23 07:03	03/22/23 23:34	1
Total PeCDD	ND		0.000050	0.00000049	ug/L		03/16/23 07:03	03/22/23 23:34	1
Total PeCDF	ND		0.000050	0.00000044	ug/L		03/16/23 07:03	03/22/23 23:34	1
Total HxCDD	0.00000490	J,DX q	0.000050	0.00000048	ug/L		03/16/23 07:03	03/22/23 23:34	1
Total HxCDF	0.00000178	J,DX q	0.000050	0.00000049	ug/L		03/16/23 07:03	03/22/23 23:34	1
Total HpCDD	0.0000168	J,DX	0.000050	0.00000055	ug/L		03/16/23 07:03	03/22/23 23:34	1
Total HpCDF	0.0000116	J,DX q	0.000050	0.00000080	ug/L		03/16/23 07:03	03/22/23 23:34	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*70*		*25 - 164*	*03/16/23 07:03*	*03/22/23 23:34*	*1*
13C-2,3,7,8-TCDF	*73*		*24 - 169*	*03/16/23 07:03*	*03/22/23 23:34*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-661244/1-A
Matrix: Water
Analysis Batch: 662732

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 661244

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDD	72		25 - 181	03/16/23 07:03	03/22/23 23:34	1
13C-1,2,3,7,8-PeCDF	76		24 - 185	03/16/23 07:03	03/22/23 23:34	1
13C-2,3,4,7,8-PeCDF	73		21 - 178	03/16/23 07:03	03/22/23 23:34	1
13C-1,2,3,4,7,8-HxCDD	66		32 - 141	03/16/23 07:03	03/22/23 23:34	1
13C-1,2,3,6,7,8-HxCDD	69		28 - 130	03/16/23 07:03	03/22/23 23:34	1
13C-1,2,3,4,7,8-HxCDF	61		26 - 152	03/16/23 07:03	03/22/23 23:34	1
13C-1,2,3,6,7,8-HxCDF	73		26 - 123	03/16/23 07:03	03/22/23 23:34	1
13C-1,2,3,7,8,9-HxCDF	83		29 - 147	03/16/23 07:03	03/22/23 23:34	1
13C-2,3,4,6,7,8-HxCDF	81		28 - 136	03/16/23 07:03	03/22/23 23:34	1
13C-1,2,3,4,6,7,8-HpCDD	67		23 - 140	03/16/23 07:03	03/22/23 23:34	1
13C-1,2,3,4,6,7,8-HpCDF	62		28 - 143	03/16/23 07:03	03/22/23 23:34	1
13C-1,2,3,4,7,8,9-HpCDF	72		26 - 138	03/16/23 07:03	03/22/23 23:34	1
13C-OCDD	82		17 - 157	03/16/23 07:03	03/22/23 23:34	1
13C-OCDF	85		17 - 157	03/16/23 07:03	03/22/23 23:34	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	85		35 - 197	03/16/23 07:03	03/22/23 23:34	1

Lab Sample ID: LCS 320-661244/2-A
Matrix: Water
Analysis Batch: 662732

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 661244

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000200		ug/L		100	67 - 158
2,3,7,8-TCDF	0.000200	0.000214		ug/L		107	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.000953		ug/L		95	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.000964		ug/L		96	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000969		ug/L		97	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.000918		ug/L		92	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000980		ug/L		98	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.00101		ug/L		101	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.000941		ug/L		94	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000963		ug/L		96	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.000940		ug/L		94	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000945		ug/L		95	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.000963		ug/L		96	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.00100		ug/L		100	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000960		ug/L		96	78 - 138
OCDD	0.00200	0.00199		ug/L		99	78 - 144
OCDF	0.00200	0.00200		ug/L		100	63 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	71		20 - 175
13C-2,3,7,8-TCDF	72		22 - 152
13C-1,2,3,7,8-PeCDD	68		21 - 227
13C-1,2,3,7,8-PeCDF	73		21 - 192
13C-2,3,4,7,8-PeCDF	70		13 - 328

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-661244/2-A
Matrix: Water
Analysis Batch: 662732

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 661244

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCDD	65		21 - 193
13C-1,2,3,6,7,8-HxCDD	69		25 - 163
13C-1,2,3,4,7,8-HxCDF	65		19 - 202
13C-1,2,3,6,7,8-HxCDF	72		21 - 159
13C-1,2,3,7,8,9-HxCDF	83		17 - 205
13C-2,3,4,6,7,8-HxCDF	78		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	69		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	63		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	75		20 - 186
13C-OCDD	82		13 - 199
13C-OCDF	84		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	87		31 - 191

Lab Sample ID: LCSD 320-661244/3-A
Matrix: Water
Analysis Batch: 662732

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 661244

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000196		ug/L		98	67 - 158	2	50
2,3,7,8-TCDF			0.000200	0.000212		ug/L		106	75 - 158	1	50
1,2,3,7,8-PeCDD			0.00100	0.000938		ug/L		94	70 - 142	2	50
1,2,3,7,8-PeCDF			0.00100	0.000953		ug/L		95	80 - 134	1	50
2,3,4,7,8-PeCDF			0.00100	0.000974		ug/L		97	68 - 160	0	50
1,2,3,4,7,8-HxCDD			0.00100	0.000929		ug/L		93	70 - 164	1	50
1,2,3,6,7,8-HxCDD			0.00100	0.000948		ug/L		95	76 - 134	3	50
1,2,3,7,8,9-HxCDD			0.00100	0.00105		ug/L		105	64 - 162	3	50
1,2,3,4,7,8-HxCDF			0.00100	0.000939		ug/L		94	72 - 134	0	50
1,2,3,6,7,8-HxCDF			0.00100	0.000954		ug/L		95	84 - 130	1	50
1,2,3,7,8,9-HxCDF			0.00100	0.000936		ug/L		94	78 - 130	0	50
2,3,4,6,7,8-HxCDF			0.00100	0.000947		ug/L		95	70 - 156	0	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000939		ug/L		94	70 - 140	3	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.000996		ug/L		100	82 - 122	1	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000940		ug/L		94	78 - 138	2	50
OCDD			0.00200	0.00191		ug/L		95	78 - 144	4	50
OCDF			0.00200	0.00193		ug/L		96	63 - 170	4	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	70		20 - 175
13C-2,3,7,8-TCDF	73		22 - 152
13C-1,2,3,7,8-PeCDD	71		21 - 227
13C-1,2,3,7,8-PeCDF	75		21 - 192
13C-2,3,4,7,8-PeCDF	71		13 - 328
13C-1,2,3,4,7,8-HxCDD	61		21 - 193
13C-1,2,3,6,7,8-HxCDD	69		25 - 163
13C-1,2,3,4,7,8-HxCDF	60		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-661244/3-A
Matrix: Water
Analysis Batch: 662732

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 661244

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	70		21 - 159
13C-1,2,3,7,8,9-HxCDF	81		17 - 205
13C-2,3,4,6,7,8-HxCDF	79		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	71		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	62		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	76		20 - 186
13C-OCDD	85		13 - 199
13C-OCDF	88		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	82		31 - 191

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129968-2
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Specialty Organics

Prep Batch: 661244

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1 - RA	Outfall018_20230305_Comp	Total/NA	Water	1613B	
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	1613B	
MB 320-661244/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-661244/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-661244/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 662732

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	1613B	661244
MB 320-661244/1-A	Method Blank	Total/NA	Water	1613B	661244
LCS 320-661244/2-A	Lab Control Sample	Total/NA	Water	1613B	661244
LCSD 320-661244/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	661244

Analysis Batch: 664479

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1 - RA	Outfall018_20230305_Comp	Total/NA	Water	1613B	661244

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-2

Client Sample ID: Outfall018_20230305_Comp

Date Collected: 03/05/23 07:55
Date Received: 03/06/23 17:00

Lab Sample ID: 570-129968-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		1052.3 mL	20.0 uL	661244	03/16/23 07:03	FC	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	664479	03/28/23 13:54	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			1052.3 mL	20.0 uL	661244	03/16/23 07:03	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	662732	03/23/23 04:19	DB	EET SAC
	Instrument ID: 12D5									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129968-2
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	03-29-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-24
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	02-28-26
Utah	NELAP	CA000442021-12	02-28-23 *
Virginia	NELAP	460278	03-14-24
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-2

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129968-1	Outfall018_20230305_Comp	Water	03/05/23 07:55	03/06/23 17:00

Eurofins Calscience Irvine

570-129968 Chain of Custody

CHAIN OF CUSTODY FORM

129968

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel: 714-895-5494 **ECI Project #57013187**	**Project Manager: Katherine Miller** 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Field Manager: Mark Dominick** 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

									R	R	R	R	R	R	R	R	R	R	R	C				
									ANALYSIS REQUIRED															
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl-, SO_4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	Turbidity, TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)				
Outfall 018	Outfall018_20230305_Comp	3/5/2023 0755	WM	500 mL Poly	1	HNO_3	90	Yes	X										X					
			WM	1 L Glass Amber	2	None	110	No		X														
			WM	1L Poly	1	None	115	No			X													
			WM	500 mL Poly	2	None	120	No				X												
			WM	500 mL Poly	2	None	130	No					X											48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X										48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X								
			WM	1 L Glass Amber	2	None	170	No									X							
			WM	1 L Glass Amber	2	None	180	No										X						
			WM	1L Poly	1	None	185	No							X									
	Outfall018_20230305_Comp_Extra	3/5/2023 0755	WM	1 L Glass Amber	2	None	110	No		H														Hold
			WM	500 mL Poly	2	None	120	No				H												Hold
			WM	500 mL Poly	2	None	130	No					H											Hold
			WM	1 L Glass Amber	2	None	170	No									H							Hold
			WM	1 L Glass Amber	2	None	180	No										H						Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:	
[signature]	3-6-2023 / 1355	H:A	[signature]	3/6/23	1355 EC
[signature]	3/6/23	1700 EC	[signature]	3/6/23	1700
Relinquished By	Date/Time:	Company:	Received By	Date/Time:	

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

1.7/1.7, 1.8/1.8, 2.1/2.1 SC11

2019-2020 Rainy Season
Version 4

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:	ANALYSIS REQUIRED
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp	
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel: 714-895-5494 **ECI Project #57013187**		
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)		Total Dissolved Metals: Mercury (E245.1)							
									R	R	R	R	R	C					
Outfall 018	Outfall018_20230305_Comp_F	3/5/2023 0755	WM	1L Poly	1	None	200	Yes	X										
			WM	borosilicate vials	1	None	320	No					X						Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230305_Comp	3/5/2023 0755	WM	500 mL Poly	1	NaOH	220	No		X									
			WM	2.5 Gal Cube	1	None	225	No			X								Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No											

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Mark Dominick	3-6-2023 1355	H.A		3/6/23 1355 EC
	3/6/23 1700	EC		3/6/23 1700

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

2019-2020 Rainy Season
Version 4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-209419.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129968-1
Address: 13715 Rider Trail North,	Due Date Requested: 3/16/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email	WO #:			
Project Name: Boeing NPDES SSFL Routine Outfall 018 Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oi BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	906.0/LSC_Dist_Susp Tritium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230305_Comp (570-129968-1)	3/5/23	07:55 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	03/07/23 10 30	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-209419

Containers

Count	Container Type	Preservative

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-209435.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-129968-2
Address: 880 Riverside Parkway,	Due Date Requested: 3/22/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall 018 - Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall018_20230305_Comp (570-129968-1)	3/5/23	07:55 Pacific		Water			X	2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		03/07/23 12:00	EC		3.8.23 930	GEL
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.: 1517114	Cooler Temperature(s) °C and Other Remarks: 4.0c

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-209610.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-129968-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 3/22/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall 018 - Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall018_20230305_Comp_Extra (570-129968-2)	3/5/23	07:55 Pacific		Water			X	2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Date/Time	Company		Date/Time	Company
Relinquished by:	03/08/23 11:12	EC	Received by:	3.9.23 9:15	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: Seal	Cooler Temperature(s) °C and Other Remarks: 1.7c

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-209610.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-129968-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 3/22/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall 018 - Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall018_20230305_Comp_Extra (570-129968-2)	3/5/23	07:55 Pacific		Water			X	2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	03/08/23 11:12	EC		3-9-23 9:15	BSK
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: Seal	Cooler Temperature(s) °C and Other Remarks: 1.7c

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129968-2

Login Number: 129968
List Number: 1
Creator: Cruise, Noel

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129968-2

Login Number: 129968
List Number: 3
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 03/08/23 04:58 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	1517114
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.0c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129968-2

Login Number: 129968
List Number: 4
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 03/09/23 05:02 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.7c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/12/2023 7:22:52 PM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall 018 - Comp

JOB NUMBER

570-129968-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

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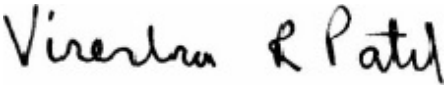
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-3

Qualifiers

Rad

Qualifier	Qualifier Description
F	MS/MSD Recovery and/or RPD exceeds the control limits
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129968-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129968-3

Comments
No additional comments.

Receipt
The samples were received on 3/6/2023 5:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.8º C and 2.1º C.

Receipt Exceptions

The reference method requires samples to have a pH of <2. The following samples were received with a pH of 7: <Affected Samples>. The samples were adjusted to the appropriate pH in the laboratory.

RAD
Method 900.0: Gross Alpha Beta prep batch 160-606236:

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 160-606326 and analytical batch 160-606671 were outside control limits for one or more analytes. In addition RER/RPD was also outside of control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 900.0: Gross Alpha Beta prep batch 160-606326:

The detection goal was not met for the following sample(s). The samples and batch QC were prepped at full volume. Matrix interferences are suspected because the method blank achieved the detection goal demonstrating acceptable sample preparation and instrument performance. (570-129852-R-1-F)

Method 900.0: Gross Alpha Beta prep batch 160-606326:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230305_Comp (570-129968-1), (LCS 160-606326/2-A), (LCSB 160-606326/3-A), (MB 160-606326/1-A), (570-129852-R-1-F), (570-129852-R-1-J MS), (570-129852-R-1-L MSBT), (570-129852-R-1-M MSBTD) and (570-129852-R-1-K MSD)

Method 901.1: Gamma Prep Batch 160-604032
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231

Job ID: 570-129968-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

**The method blank (MB) Z-score is within limits and is located in the level IV raw data.

Outfall018_20230305_Comp (570-129968-1), (570-128840-R-1-D) and (570-128840-R-1-E DU)

Methods 903.0, 9315: Radium-226 batch 603854
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Methods 904.0, 9320: Radium-228 batch 603857
The LCS recovered at (128%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCSD 160-603857/25-A)

Methods 904.0, 9320: Radium-228 batch 603857
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230305_Comp (570-129968-1), (LCS 160-603857/2-A), (LCSD 160-603857/25-A), (MB 160-603857/1-A), (570-129852-R-1-B), (570-129852-L-1-C MS) and (570-129852-L-1-D MSD)

Method 905: Strontium-90 batch 604379
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230305_Comp (570-129968-1), (LCS 160-604379/2-A), (MB 160-604379/1-A), (570-129852-R-1-D), (570-129852-L-1-E MS) and (570-129852-L-1-F MSD)

Method 906.0: Tritium 605397
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall018_20230305_Comp (570-129968-1), (LCS 160-605397/2-A), (MB 160-605397/1-A), (570-129852-Q-1-B), (570-129852-K-1-D MS) and (570-129852-K-1-E MSD)

Method 906.0: The matrix spike duplicate (MSD) recovery was inadvertently not spiked. However the matrix spike (MS) was within range and all other QC was within limits. Per client, the data will be reported with this narrative.Outfall018_20230305_Comp (570-129968-1), (570-129852-Q-1-B), (570-129852-K-1-D MS) and (570-129852-K-1-E MSD)

Method A-01-R: Isotopic Uranium Batch 605724

Job ID: 570-129968-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.Outfall018_20230305_Comp (570-129968-1), (LCS 160-605724/2-A), (MB 160-605724/1-A), (570-129852-R-1-E), (570-129852-L-1-G MS) and (570-129852-L-1-H MSD)

Method ExtChrom: Uranium Prep Batch 160-605724:
The following sample was prepared at a reduced aliquot due to sediment and discoloration: Outfall018_20230305_Comp (570-129968-1).

Method PrecSep_0:

Method PrecSep-21:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129968-3
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Client Sample ID: Outfall018_20230305_Comp
Lab Sample ID: 570-129968-1

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-3

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: Outfall018_20230305_Comp
Date Collected: 03/05/23 07:55
Date Received: 03/06/23 17:00

Lab Sample ID: 570-129968-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.865	U F	0.715	0.721	3.00	1.77	pCi/L	04/06/23 10:28	04/11/23 06:11	1
Gross Beta	0.660	U	0.504	0.508	4.00	0.785	pCi/L	04/06/23 10:28	04/11/23 06:11	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-3

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: Outfall018_20230305_Comp
Date Collected: 03/05/23 07:55
Date Received: 03/06/23 17:00

Lab Sample ID: 570-129968-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	4.23	U	8.42	8.43	20.0	10.9	pCi/L	03/17/23 14:08	03/29/23 17:45	1
Potassium-40	18.7	U	94.5	94.5		173	pCi/L	03/17/23 14:08	03/29/23 17:45	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-3

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: Outfall018_20230305_Comp
Date Collected: 03/05/23 07:55
Date Received: 03/06/23 17:00

Lab Sample ID: 570-129968-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0342	U	0.0826	0.0826	1.00	0.153	pCi/L	03/16/23 07:58	04/07/23 10:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.3*		*30 - 110*	*03/16/23 07:58*	*04/07/23 10:46*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-3

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: Outfall018_20230305_Comp
Date Collected: 03/05/23 07:55
Date Received: 03/06/23 17:00

Lab Sample ID: 570-129968-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.448	U	0.465	0.467	1.00	0.754	pCi/L	03/16/23 09:45	03/30/23 12:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.3*		*30 - 110*	*03/16/23 09:45*	*03/30/23 12:08*	*1*
Y Carrier	*88.6*		*30 - 110*	*03/16/23 09:45*	*03/30/23 12:08*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-3

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: Outfall018_20230305_Comp
Date Collected: 03/05/23 07:55
Date Received: 03/06/23 17:00

Lab Sample ID: 570-129968-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.197	U	0.262	0.262	3.00	0.436	pCi/L	03/20/23 13:22	03/29/23 16:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*66.9*		*30 - 110*	*03/20/23 13:22*	*03/29/23 16:06*	*1*
Y Carrier	*80.4*		*30 - 110*	*03/20/23 13:22*	*03/29/23 16:06*	*1*

Client Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-129968-3
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: Outfall018_20230305_Comp
Lab Sample ID: 570-129968-1
Date Collected: 03/05/23 07:55
Matrix: Water
Date Received: 03/06/23 17:00

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	57.2	U F	147	147	500	261	pCi/L	03/29/23 11:02	04/04/23 20:37	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-3

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: Outfall018_20230305_Comp
Date Collected: 03/05/23 07:55
Date Received: 03/06/23 17:00

Lab Sample ID: 570-129968-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.643		0.298	0.300	1.00	0.166	pCi/L	03/30/23 15:31	04/04/23 20:40	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*97.8*		*30 - 110*	*03/30/23 15:31*	*04/04/23 20:40*	*1*

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-3

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-129968-1	Outfall018_20230305_Comp	85.3
LCS 160-603854/2-A	Lab Control Sample	94.8
LCSD 160-603854/25-A	Lab Control Sample Dup	89.2
MB 160-603854/1-A	Method Blank	91.5

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-129968-1	Outfall018_20230305_Comp	85.3	88.6
LCS 160-603857/2-A	Lab Control Sample	94.8	81.5
LCSD 160-603857/25-A	Lab Control Sample Dup	89.2	87.5
MB 160-603857/1-A	Method Blank	91.5	83.7

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-129968-1	Outfall018_20230305_Comp	66.9	80.4
LCS 160-604379/2-A	Lab Control Sample	85.6	76.6
MB 160-604379/1-A	Method Blank	79.3	70.3

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-129968-1	Outfall018_20230305_Comp	97.8
LCS 160-605724/2-A	Lab Control Sample	92.1
MB 160-605724/1-A	Method Blank	92.8

Tracer/Carrier Legend

U-232 = Uranium-232

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-3

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-606326/1-A
Matrix: Water
Analysis Batch: 606671

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606326

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.4133	U	0.657	0.658	3.00	1.12	pCi/L	04/06/23 10:28	04/10/23 20:47	1
Gross Beta	0.02677	U	0.496	0.496	4.00	0.874	pCi/L	04/06/23 10:28	04/10/23 20:47	1

Lab Sample ID: LCS 160-606326/2-A
Matrix: Water
Analysis Batch: 606895

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606326

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	51.96		7.62	3.00	2.05	pCi/L	103	75 - 125

Lab Sample ID: LCSB 160-606326/3-A
Matrix: Water
Analysis Batch: 606671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606326

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.4	74.51		7.98	4.00	0.927	pCi/L	102	75 - 125

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-604032/1-A
Matrix: Water
Analysis Batch: 604760

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604032

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-0.4655	U	10.3	10.3	20.0	12.1	pCi/L	03/17/23 14:08	03/22/23 19:49	1
Potassium-40	12.53	U	78.9	78.9		135	pCi/L	03/17/23 14:08	03/22/23 19:49	1

Lab Sample ID: LCS 160-604032/2-A
Matrix: Water
Analysis Batch: 604760

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604032

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	143200		17000		415	pCi/L	106	75 - 125
Cesium-137	40900	41780		4980	20.0	92.9	pCi/L	102	75 - 125
Cobalt-60	17800	18360		2190		50.3	pCi/L	103	75 - 125

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-603854/1-A
Matrix: Water
Analysis Batch: 606563

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 603854

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.006854	U	0.0481	0.0481	1.00	0.106	pCi/L	03/16/23 07:58	04/07/23 10:41	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.5*		*30 - 110*	*03/16/23 07:58*	*04/07/23 10:41*	*1*

Lab Sample ID: LCS 160-603854/2-A
Matrix: Water
Analysis Batch: 606563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 603854

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	11.41		1.18	1.00	0.0785	pCi/L	101	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*94.8*		*30 - 110*

Lab Sample ID: LCSD 160-603854/25-A
Matrix: Water
Analysis Batch: 606587

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 603854

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	10.67		1.13	1.00	0.155	pCi/L	94	75 - 125	0.32	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*89.2*		*30 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-603857/1-A
Matrix: Water
Analysis Batch: 605623

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 603857

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.4545		0.308	0.311	1.00	0.452	pCi/L	03/16/23 09:45	03/30/23 12:11	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.5*		*30 - 110*	*03/16/23 09:45*	*03/30/23 12:11*	*1*
Y Carrier	*83.7*		*30 - 110*	*03/16/23 09:45*	*03/30/23 12:11*	*1*

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-603857/2-A
Matrix: Water
Analysis Batch: 605623

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 603857

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.08	9.981		1.32	1.00	0.466	pCi/L	124	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*94.8*		*30 - 110*
Y Carrier	*81.5*		*30 - 110*

Lab Sample ID: LCSD 160-603857/25-A
Matrix: Water
Analysis Batch: 605624

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 603857

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.08	10.32		1.36	1.00	0.479	pCi/L	128	75 - 125	0.13	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*89.2*		*30 - 110*
Y Carrier	*87.5*		*30 - 110*

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-604379/1-A
Matrix: Water
Analysis Batch: 605413

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604379

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.1030	U	0.268	0.268	3.00	0.492	pCi/L	03/20/23 13:22	03/29/23 15:59	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*79.3*		*30 - 110*	*03/20/23 13:22*	*03/29/23 15:59*	*1*
Y Carrier	*70.3*		*30 - 110*	*03/20/23 13:22*	*03/29/23 15:59*	*1*

Lab Sample ID: LCS 160-604379/2-A
Matrix: Water
Analysis Batch: 605413

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604379

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.35	7.405		0.842	3.00	0.323	pCi/L	101	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*85.6*		*30 - 110*
Y Carrier	*76.6*		*30 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-605397/1-A
Matrix: Water
Analysis Batch: 606179

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605397

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	81.53	U	151	151	500	263	pCi/L	03/29/23 11:02	04/04/23 16:05	1

Lab Sample ID: LCS 160-605397/2-A
Matrix: Water
Analysis Batch: 606179

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605397

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Tritium	2090	1744		317	500	251	pCi/L	83	75 - 125

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-605724/1-A
Matrix: Water
Analysis Batch: 606117

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605724

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.03149	U	0.08996	0.09003	1.00	0.148	pCi/L	03/30/23 15:31	04/04/23 20:40	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*92.8*		*30 - 110*	*03/30/23 15:31*	*04/04/23 20:40*	*1*

Lab Sample ID: LCS 160-605724/2-A
Matrix: Water
Analysis Batch: 606357

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605724

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Uranium-234	12.7	13.25		1.55	1.00	0.113	pCi/L	104	75 - 125
Uranium-238	13.0	13.61		1.58	1.00	0.123	pCi/L	105	75 - 125

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*92.1*		*30 - 110*

Client: Haley & Aldrich, Inc.
Job ID: 570-129968-3
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Rad

Prep Batch: 603854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	PrecSep-21	
MB 160-603854/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-603854/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-603854/25-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 603857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	PrecSep_0	
MB 160-603857/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-603857/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-603857/25-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 604032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	Fill_Geo-0	
MB 160-604032/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-604032/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 604379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	PrecSep-7	
MB 160-604379/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-604379/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	

Prep Batch: 605397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	LSC_Dist_Susp	
MB 160-605397/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-605397/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 605724

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	ExtChrom	
MB 160-605724/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-605724/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 606326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129968-1	Outfall018_20230305_Comp	Total/NA	Water	Evaporation	
MB 160-606326/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-606326/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-606326/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-3

Client Sample ID: Outfall018_20230305_Comp

Date Collected: 03/05/23 07:55
Date Received: 03/06/23 17:00

Lab Sample ID: 570-129968-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Evaporation			200.02 mL	1.0 g	606326	04/06/23 10:28	MST	EET SL
Total/NA	Analysis	900.0		1			606892	04/11/23 06:11	SCB	EET SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	604032	03/17/23 14:08	SEH	EET SL
Total/NA	Analysis	901.1		1			605378	03/29/23 17:45	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	PrecSep-21			746.28 mL	1.0 g	603854	03/16/23 07:58	DJP	EET SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	606587	04/07/23 10:46	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			746.28 mL	1.0 g	603857	03/16/23 09:45	DJP	EET SL
Total/NA	Analysis	904.0		1			605623	03/30/23 12:08	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-7			1003.27 mL	1.0 g	604379	03/20/23 13:22	DJP	EET SL
Total/NA	Analysis	905		1			605412	03/29/23 16:06	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	LSC_Dist_Susp			102.75 mL	1.0 g	605397	03/29/23 11:02	SEH	EET SL
Total/NA	Analysis	906.0		1			606179	04/04/23 20:37	REV	EET SL
	Instrument ID: LSCAQUA									
Total/NA	Prep	ExtChrom			302.9 mL	1.0 mL	605724	03/30/23 15:31	CMM	EET SL
Total/NA	Analysis	A-01-R		1			606114	04/04/23 20:40	EJS	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129968-3
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	06-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-23
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-3

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy
EPA = US Environmental Protection Agency
None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Comp

Job ID: 570-129968-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129968-1	Outfall018_20230305_Comp	Water	03/05/23 07:55	03/06/23 17:00

Eurofins Calscience Irvine

570-129968 Chain of Custody

CHAIN OF CUSTODY FORM

129968

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel: 714-895-5494 **ECI Project #57013187**	**Project Manager: Katherine Miller** 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Field Manager: Mark Dominick** 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

									R	R	R	R	R	R	R	R	R	R	R	C				
									ANALYSIS REQUIRED															
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl-, SO_4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	Turbidity, TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)				
Outfall 018	Outfall018_20230305_Comp	3/5/2023 0755	WM	500 mL Poly	1	HNO_3	90	Yes	X										X					
			WM	1 L Glass Amber	2	None	110	No		X														
			WM	1L Poly	1	None	115	No			X													
			WM	500 mL Poly	2	None	120	No				X												
			WM	500 mL Poly	2	None	130	No					X											48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X										48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X								
			WM	1 L Glass Amber	2	None	170	No									X							
			WM	1 L Glass Amber	2	None	180	No										X						
			WM	1L Poly	1	None	185	No							X									
	Outfall018_20230305_Comp_Extra	3/5/2023 0755	WM	1 L Glass Amber	2	None	110	No		H														Hold
			WM	500 mL Poly	2	None	120	No				H												Hold
			WM	500 mL Poly	2	None	130	No					H											Hold
			WM	1 L Glass Amber	2	None	170	No									H							Hold
			WM	1 L Glass Amber	2	None	180	No										H						Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:	
[signature]	3-6-2023 / 1355	H:A	[signature]	3/6/23	1355 EC
[signature]	3/6/23	1700 EC	[signature]	3/6/23	1700
Relinquished By	Date/Time:	Company:	Received By	Date/Time:	

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

1.7/1.7, 1.8/1.8, 2.1/2.1 SC11

2019-2020 Rainy Season
Version 4

4/12/2023

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel: 714-895-5494 **ECI Project #57013187**	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Project Manager: Katherine Miller** 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	**Field Manager: Mark Dominick** 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED												
									R	R	R	R	R	C							
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)		Total Dissolved Metals: Mercury (E245.1)								
Outfall 018	Outfall018_20230305_Comp_F	3/5/2023 0755	WM	1L Poly	1	None	200	Yes	X												
			WM	borosilicate vials	1	None	320	No					X								Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230305_Comp	3/5/2023 0755	WM	500 mL Poly	1	NaOH	220	No		X											
			WM	2.5 Gal Cube	1	None	225	No			X										Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No													

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Mark Dominick	3-6-2023 / 1355	H.A		3/6/23 1355 EC
	3/6/23 1700	EC		3/6/23 1700

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

2019-2020 Rainy Season
Version 4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-209419.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129968-1
Address: 13715 Rider Trail North,	Due Date Requested: 3/16/2023			Preservation Codes:
City: Earth City	TAT Requested (days):			A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
State, Zip: MO 63045				Other:
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL Routine Outfall 018 Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oi, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	906.0/LSC_Dist_Susp Tritium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230305_Comp (570-129968-1)	3/5/23	07:55 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 03/07/23 10 30	Company EC	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

4/12/2023

ICOC No:
570-209419

Containers

Count	Container Type	Preservative

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-209419.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129968-1
Address: 13715 Rider Trail North,	Due Date Requested: 3/16/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall 018 - Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	906.0/LSC_Dist_Susp Tritium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901.1_Cs/FIII_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230305_Comp (570-129968-1)	3/5/23	07:55 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
FED EX	03/07/23 10:30	FED EX	FED EX		
Relinquished by: FED EX	Date/Time:	Company	Received by: Sierra Worthington	Date/Time: MAR 0 8 2023 1030	Company GTASR
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129968-3

Login Number: 129968
List Number: 1
Creator: Cruise, Noel

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129968-3

Login Number: 129968
List Number: 2
Creator: Worthington, Sierra M

List Source: Eurofins St. Louis
List Creation: 03/08/23 01:51 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	False	Refer to Job Narrative for details.
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/21/2023 7:33:11 PM Revision 3

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall 018 - Grab

JOB NUMBER

570-129985-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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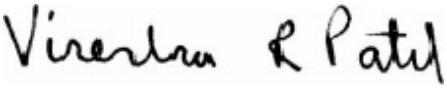
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Revision 3

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-129985-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grat

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129985-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129985-1

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 3/22/2023. The report (revision 3) is being revised due to: The data files were revised to update the analyte list for EPA 624.1 to match the COC..

Report revision history
Revision 1 - 4/4/2023 - Reason - The EP 624.1 list of analytes was revised to include 1,2-DCA..

Revision 2 - 4/7/2023 - Reason - The data files were revised to update the analyte list for EPA 624.1 to match the COC..

Receipt
The samples were received on 3/6/2023 5:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.9º C.

GC/MS VOA
Method 624.1: The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following samples were received preserved with hydrochloric acid: Outfall018_20230306_Grab (570-129985-1) and TB-20230306 (570-129985-3). The requested target analyte list contains 2-Chloroethyl vinyl ether and/or Acrolein, which are acid-labile compounds that degrade in an acidic medium.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 1664A: The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-310236.
Method: 1664.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129985-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grab

Client Sample ID: Outfall018_20230306_Grab
Lab Sample ID: 570-129985-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	440		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA

Client Sample ID: TB-20230306
Lab Sample ID: 570-129985-3

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc. Job ID: 570-129985-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grab

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: Outfall018_20230306_Grab **Lab Sample ID: 570-129985-1**
Date Collected: 03/06/23 07:45 **Matrix: Water**
Date Received: 03/06/23 17:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/06/23 21:16	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/06/23 21:16	1
Trichloroethene	ND		0.50	0.17	ug/L			03/06/23 21:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*60 - 140*		*03/06/23 21:16*	*1*
Toluene-d8 (Surr)	*96*		*60 - 140*		*03/06/23 21:16*	*1*
Dibromofluoromethane (Surr)	*90*		*60 - 140*		*03/06/23 21:16*	*1*

Client Sample ID: TB-20230306 **Lab Sample ID: 570-129985-3**
Date Collected: 03/06/23 07:45 **Matrix: Water**
Date Received: 03/06/23 17:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/06/23 20:54	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/06/23 20:54	1
Trichloroethene	ND		0.50	0.17	ug/L			03/06/23 20:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*60 - 140*		*03/06/23 20:54*	*1*
Toluene-d8 (Surr)	*97*		*60 - 140*		*03/06/23 20:54*	*1*
Dibromofluoromethane (Surr)	*94*		*60 - 140*		*03/06/23 20:54*	*1*

General Chemistry

Client Sample ID: Outfall018_20230306_Grab
Lab Sample ID: 570-129985-1
Date Collected: 03/06/23 07:45
Matrix: Water
Date Received: 03/06/23 17:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	ND		1.0	0.52	mg/L		03/09/23 10:10	03/10/23 07:51	1
Specific Conductance (SM 2510B)	**440**		1.0	1.0	umhos/cm			03/10/23 20:25	1
Settleable Solids (SM 2540F)	ND		0.10	0.10	mL/L			03/07/23 13:34	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129985-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grab

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)								
		BFB	TOL	DBFM						
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)						
570-129985-1	Outfall018_20230306_Grab	92	96	90						
570-129985-3	TB-20230306	97	97	94						
LCS 570-309123/1003	Lab Control Sample	99	98	93						
LCSD 570-309123/4	Lab Control Sample Dup	95	95	97						
MB 570-309123/6	Method Blank	98	100	95						

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-309123/6
Matrix: Water
Analysis Batch: 309123

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/06/23 10:51	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/06/23 10:51	1
Trichloroethene	ND		0.50	0.17	ug/L			03/06/23 10:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*		*03/06/23 10:51*	*1*
Toluene-d8 (Surr)	*100*		*60 - 140*		*03/06/23 10:51*	*1*
Dibromofluoromethane (Surr)	*95*		*60 - 140*		*03/06/23 10:51*	*1*

Lab Sample ID: LCS 570-309123/1003
Matrix: Water
Analysis Batch: 309123

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1-Dichloroethene			10.0	10.5		ug/L		105	50 - 150		
1,2-Dichloroethane			10.0	9.16		ug/L		92	70 - 130		
Trichloroethene			10.0	10.3		ug/L		103	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*60 - 140*
Toluene-d8 (Surr)	*98*		*60 - 140*
Dibromofluoromethane (Surr)	*93*		*60 - 140*

Lab Sample ID: LCSD 570-309123/4
Matrix: Water
Analysis Batch: 309123

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene			10.0	9.92		ug/L		99	50 - 150	5	32
1,2-Dichloroethane			10.0	9.13		ug/L		91	70 - 130	0	49
Trichloroethene			10.0	10.0		ug/L		100	65 - 135	3	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*60 - 140*
Toluene-d8 (Surr)	*95*		*60 - 140*
Dibromofluoromethane (Surr)	*97*		*60 - 140*

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-310236/1-A
Matrix: Water
Analysis Batch: 310507

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 310236

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		1.0	0.51	mg/L		03/09/23 10:10	03/10/23 07:51	1

Method: 1664A - HEM and SGT-HEM (Continued)

Lab Sample ID: LCS 570-310236/2-A
Matrix: Water
Analysis Batch: 310507

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 310236

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM (Oil & Grease)	40.0	37.3		mg/L		93	78 - 114

Lab Sample ID: LCSD 570-310236/3-A
Matrix: Water
Analysis Batch: 310507

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 310236

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM (Oil & Grease)	40.0	38.7		mg/L		97	78 - 114	4	18

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-310790/38
Matrix: Water
Analysis Batch: 310790

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/10/23 19:04	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grat

Job ID: 570-129985-1

GC/MS VOA

Analysis Batch: 309123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129985-1	Outfall018_20230306_Grab	Total/NA	Water	624.1	
570-129985-3	TB-20230306	Total/NA	Water	624.1	
MB 570-309123/6	Method Blank	Total/NA	Water	624.1	
LCS 570-309123/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-309123/4	Lab Control Sample Dup	Total/NA	Water	624.1	

General Chemistry

Analysis Batch: 309623

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129985-1	Outfall018_20230306_Grab	Total/NA	Water	SM 2540F	

Prep Batch: 310236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129985-1	Outfall018_20230306_Grab	Total/NA	Water	1664A	
MB 570-310236/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-310236/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-310236/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 310507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129985-1	Outfall018_20230306_Grab	Total/NA	Water	1664A	310236
MB 570-310236/1-A	Method Blank	Total/NA	Water	1664A	310236
LCS 570-310236/2-A	Lab Control Sample	Total/NA	Water	1664A	310236
LCSD 570-310236/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	310236

Analysis Batch: 310790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129985-1	Outfall018_20230306_Grab	Total/NA	Water	SM 2510B	
MB 570-310790/38	Method Blank	Total/NA	Water	SM 2510B	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-129985-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grab

Client Sample ID: Outfall018_20230306_Grab
Lab Sample ID: 570-129985-1
Date Collected: 03/06/23 07:45
Matrix: Water
Date Received: 03/06/23 17:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	309123	03/06/23 21:16	A1W	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Prep	1664A			985 mL	1000 mL	310236	03/09/23 10:10	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			310507	03/10/23 07:51	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									
Total/NA	Analysis	SM 2510B		1			310790	03/10/23 20:25	BDH9	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	309623	03/07/23 13:34	GG0B	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB-20230306
Lab Sample ID: 570-129985-3
Date Collected: 03/06/23 07:45
Matrix: Water
Date Received: 03/06/23 17:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	309123	03/06/23 20:54	A1W	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129985-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grat

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129985-1
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grab

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4

Protocol References:

1664A = EPA-821-98-002

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall 018 - Grab

Job ID: 570-129985-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129985-1	Outfall018_20230306_Grab	Water	03/06/23 07:45	03/06/23 17:00
570-129985-3	TB-20230306	Water	03/06/23 07:45	03/06/23 17:00

129985

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

EDBPJ6UK

R R R R

Client Name/Address:
Haley & Aldrich
5333 Mission Center Rd Suite 300
San Diego, CA 92108

Eurofins Calscience Project Manager: Virendra Patel
2841 Dow Avenue, Suite #100
Tustin, CA 92780
Tel: 714-895-5494
ECI Project #57013187

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Sampler: Adrian Mobeka

Project:
Boeing-SSFL NPDES
Permit 2023
Routine Outfall [001, 002, 011, 018]
Outfall 018
Grab

Project Manager: Katherine Miller
520.289.8606, 520.904.6944 (cell)

Field Manager: Mark Dominick
978.234.5033, 818.599.0702 (cell)

Field Readings: Meter serial #

Field Readings: (Include units)
Time of Readings: 0745
DO 13.95 mg/L
pH 6.98 pH unit
Temp 49.5 °C (F)

Field readings QC
Checked by: Mark Dominick
Date/Time: 3-6-2023/0745

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Oil & Grease (E1664A-HEM)	VOCs - only 1,1-DCE, 1,2-DCA, TCE (E624)	Settleable Solids (E160.5 (SM2640F))	Conductivity (SM2510B / E120.1)	Comments
Outfall 018	Outfall018_20230306_Grab	3/6/2023 0745	WM	1 L Glass Amber	2	HCl	15	No	X				
			WM	40 mL VOA	3	HCl	30	No		X			
			WM	1L Poly	1	None	70	No			X		
			WM	500 mL Poly	1	None	75	No				X	
	Outfall018_20230306_Grab_Extra	3/6/2023 0745	WM	40 mL VOA	3	HCl	30	No		H			Hold
			WM	500 mL Poly	1	None	75	No				H	Hold
Trip Blanks	TB-20230306	3/6/2023 0745	WQ	40 mL VOA	3	HCl	30	No		X			

570-129985 Chain of Custody

Legend: R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Mark Dominick	3-6-2023/1355	H&A	[illegible]	3/6/23 1355 EC
[illegible]	3/6/23 1700	EC	[illegible]	3/6/23 1700

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: X
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: X

1.9/1.9 SC11

2019-2020 Rainy Season
Version 4

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129985-1

Login Number: 129985
List Number: 1
Creator: Cruise, Noel

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/22/2023 7:42:18 PM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall - 018 - Comp

JOB NUMBER

570-130128-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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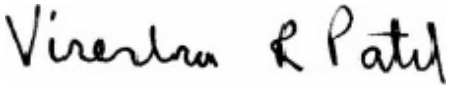
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-1

Qualifiers

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-130128-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-130128-1

Comments
No additional comments.

Receipt
The samples were received on 3/7/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.0º C.

Receipt Exceptions

The reference method requires samples to have a pH of <2. The following samples were received with a pH of 7: <Affected Samples>. The samples were adjusted to the appropriate pH in the laboratory.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Methods 245.1, 7470A: The continuing calibration verification (CCV) associated with batch 570-310669 recovered above the upper control limit for Mercury. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: Outfall018_20230307_Comp_F (570-130128-3) and (CCV 570-310614/9-A).

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: Outfall018_20230307_Comp_F (570-130128-3). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: Outfall018_20230307_Comp_F (570-130128-3), Outfall018_20230307_Comp_F (570-130128-3[MS]) and Outfall018_20230307_Comp_F (570-130128-3[MSD]). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method Kelada 01: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 570-312131 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-310287. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. 608.3 PEST LL

Job ID: 570-130128-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-1

Client Sample ID: Outfall018_20230307_Comp — Lab Sample ID: 570-130128-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	14		1.0	0.36	mg/L	1		300.0	Total/NA
Nitrate as N	0.21		0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate - DL	96		10	2.4	mg/L	10		300.0	Total/NA
Nitrate Nitrite as N	0.21		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Copper	2.2		2.0	0.32	ug/L	1		200.8	Total Recoverable
Ammonia	0.059	J,DX	0.075	0.032	mg/L	1		350.1	Total/NA
Turbidity	0.20		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Dissolved Solids	320		10	8.7	mg/L	1		SM 2540C	Total/NA
MBAS	0.069	J,DX	0.20	0.050	mg/L	1		SM 5540C	Total/NA

Client Sample ID: Outfall018_20230307_Comp_F — Lab Sample ID: 570-130128-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	2.0	BU	2.0	0.32	ug/L	1		200.8	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-1

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: Outfall018_20230307_Comp
Date Collected: 03/07/23 09:10
Date Received: 03/07/23 18:00

Lab Sample ID: 570-130128-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		0.95	0.13	ug/L		03/10/23 12:12	03/13/23 23:16	1
2,4-Dinitrotoluene	ND		0.19	0.11	ug/L		03/10/23 12:12	03/13/23 23:16	1
Bis(2-ethylhexyl) phthalate	ND		4.7	3.4	ug/L		03/10/23 12:12	03/13/23 23:16	1
N-Nitrosodimethylamine	ND		0.19	0.18	ug/L		03/10/23 12:12	03/13/23 23:16	1
Pentachlorophenol	ND		0.95	0.80	ug/L		03/10/23 12:12	03/13/23 23:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*43*		*31 - 120*	*03/10/23 12:12*	*03/13/23 23:16*	*1*
Phenol-d6 (Surr)	*16*		*10 - 120*	*03/10/23 12:12*	*03/13/23 23:16*	*1*
p-Terphenyl-d14 (Surr)	*67*		*45 - 120*	*03/10/23 12:12*	*03/13/23 23:16*	*1*
2,4,6-Tribromophenol	*73*		*28 - 127*	*03/10/23 12:12*	*03/13/23 23:16*	*1*
2-Fluorophenol	*23*		*17 - 120*	*03/10/23 12:12*	*03/13/23 23:16*	*1*
Nitrobenzene-d5	*46*		*27 - 120*	*03/10/23 12:12*	*03/13/23 23:16*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-1

Method: EPA 608.3 - Organochlorine Pesticides in Water

Client Sample ID: Outfall018_20230307_Comp
Date Collected: 03/07/23 09:10
Date Received: 03/07/23 18:00

Lab Sample ID: 570-130128-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		03/09/23 12:21	03/13/23 23:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*41*		*20 - 139*	*03/09/23 12:21*	*03/13/23 23:13*	*1*
DCB Decachlorobiphenyl (Surr)	*79*		*20 - 154*	*03/09/23 12:21*	*03/13/23 23:13*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-1

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: Outfall018_20230307_Comp
Date Collected: 03/07/23 09:10
Date Received: 03/07/23 18:00

Lab Sample ID: 570-130128-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**14**		1.0	0.36	mg/L			03/08/23 07:29	1
Nitrite as N	ND		0.10	0.043	mg/L			03/08/23 07:29	1
Nitrate as N	**0.21**		0.10	0.020	mg/L			03/08/23 07:29	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-1

Method: EPA 300.0 - Anions, Ion Chromatography - DL

Client Sample ID: Outfall018_20230307_Comp
Date Collected: 03/07/23 09:10
Date Received: 03/07/23 18:00

Lab Sample ID: 570-130128-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**96**		10	2.4	mg/L			03/08/23 10:18	10

Client: Haley & Aldrich, Inc.
Job ID: 570-130128-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: Outfall018_20230307_Comp
Lab Sample ID: 570-130128-1
Date Collected: 03/07/23 09:10
Matrix: Water
Date Received: 03/07/23 18:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/10/23 23:37	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-1

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: Outfall018_20230307_Comp
Date Collected: 03/07/23 09:10
Date Received: 03/07/23 18:00

Lab Sample ID: 570-130128-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	0.21		0.10	0.020	mg/L			03/10/23 16:06	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: Outfall018_20230307_Comp
Date Collected: 03/07/23 09:10
Date Received: 03/07/23 18:00

Lab Sample ID: 570-130128-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		03/08/23 08:49	03/08/23 12:03	1
Copper	**2.2**		2.0	0.32	ug/L		03/08/23 08:49	03/08/23 12:03	1
Lead	ND		1.0	0.12	ug/L		03/08/23 08:49	03/08/23 12:03	1
Selenium	ND		2.0	0.52	ug/L		03/08/23 08:49	03/08/23 12:03	1
Zinc	ND		20	2.8	ug/L		03/08/23 08:49	03/08/23 12:03	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: Outfall018_20230307_Comp_F
Date Collected: 03/07/23 09:10
Date Received: 03/07/23 18:00

Lab Sample ID: 570-130128-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			03/08/23 14:35	1
Copper	**2.0**	**BU**	2.0	0.32	ug/L			03/08/23 14:35	1
Lead	ND	BU	1.0	0.12	ug/L			03/08/23 14:35	1
Selenium	ND	BU	2.0	0.52	ug/L			03/08/23 14:35	1
Zinc	ND	BU	20	2.8	ug/L			03/08/23 14:35	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-1

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: Outfall018_20230307_Comp
Date Collected: 03/07/23 09:10
Date Received: 03/07/23 18:00

Lab Sample ID: 570-130128-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/08/23 22:22	03/10/23 13:07	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-1

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: Outfall018_20230307_Comp_F
Date Collected: 03/07/23 09:10
Date Received: 03/07/23 18:00

Lab Sample ID: 570-130128-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/08/23 17:10	03/10/23 14:15	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-1

General Chemistry

Client Sample ID: Outfall018_20230307_Comp
Date Collected: 03/07/23 09:10
Date Received: 03/07/23 18:00

Lab Sample ID: 570-130128-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	**0.059**	**J,DX**	0.075	0.032	mg/L		03/13/23 13:40	03/13/23 15:52	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			03/14/23 19:36	1
Turbidity (SM 2130B)	**0.20**		0.05	0.05	NTU			03/08/23 12:53	1
Total Dissolved Solids (SM 2540C)	**320**		10	8.7	mg/L			03/13/23 16:32	1
Total Suspended Solids (SM 2540D)	ND		1.0	0.83	mg/L			03/10/23 12:07	1
Biochemical Oxygen Demand (SM 5210B)	ND		2.0	1.0	mg/L		03/08/23 16:04	03/08/23 16:43	1
MBAS (SM 5540C)	**0.069**	**J,DX**	0.20	0.050	mg/L		03/08/23 13:18	03/08/23 15:26	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	FBP (31-120)	PHL6 (10-120)	TPHd14 (45-120)	TBP (28-127)	2FP (17-120)	NBZ (27-120)
570-130128-1	Outfall018_20230307_Comp	43	16	67	73	23	46
LCS 570-310496/2-A	Lab Control Sample	80	34	92	90	51	73
LCSD 570-310496/3-A	Lab Control Sample Dup	73	33	86	87	47	68
MB 570-310496/1-A	Method Blank	64	27	82	63	41	68

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	TCX1 (20-139)	DCB1 (20-154)
570-130128-1	Outfall018_20230307_Comp	41	79
LCS 570-310287/2-A	Lab Control Sample	53	72
LCSD 570-310287/3-A	Lab Control Sample Dup	63	77
MB 570-310287/1-A	Method Blank	36	61

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-310496/1-A
Matrix: Water
Analysis Batch: 311097

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 310496

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		03/10/23 06:36	03/13/23 19:26	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		03/10/23 06:36	03/13/23 19:26	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		03/10/23 06:36	03/13/23 19:26	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		03/10/23 06:36	03/13/23 19:26	1
Pentachlorophenol	ND		1.0	0.84	ug/L		03/10/23 06:36	03/13/23 19:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*64*		*31 - 120*	*03/10/23 06:36*	*03/13/23 19:26*	*1*
Phenol-d6 (Surr)	*27*		*10 - 120*	*03/10/23 06:36*	*03/13/23 19:26*	*1*
p-Terphenyl-d14 (Surr)	*82*		*45 - 120*	*03/10/23 06:36*	*03/13/23 19:26*	*1*
2,4,6-Tribromophenol	*63*		*28 - 127*	*03/10/23 06:36*	*03/13/23 19:26*	*1*
2-Fluorophenol	*41*		*17 - 120*	*03/10/23 06:36*	*03/13/23 19:26*	*1*
Nitrobenzene-d5	*68*		*27 - 120*	*03/10/23 06:36*	*03/13/23 19:26*	*1*

Lab Sample ID: LCS 570-310496/2-A
Matrix: Water
Analysis Batch: 311097

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 310496

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4,6-Trichlorophenol	20.0	18.4		ug/L		92	52 - 129
2,4-Dinitrotoluene	20.0	21.4		ug/L		107	48 - 127
Bis(2-ethylhexyl) phthalate	20.0	20.6		ug/L		103	29 - 137
N-Nitrosodimethylamine	20.0	11.2		ug/L		56	20 - 120
Pentachlorophenol	20.0	10.5		ug/L		53	38 - 152

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*80*		*31 - 120*
Phenol-d6 (Surr)	*34*		*10 - 120*
p-Terphenyl-d14 (Surr)	*92*		*45 - 120*
2,4,6-Tribromophenol	*90*		*28 - 127*
2-Fluorophenol	*51*		*17 - 120*
Nitrobenzene-d5	*73*		*27 - 120*

Lab Sample ID: LCSD 570-310496/3-A
Matrix: Water
Analysis Batch: 311097

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 310496

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4,6-Trichlorophenol	20.0	17.0		ug/L		85	52 - 129	8	35
2,4-Dinitrotoluene	20.0	20.3		ug/L		102	48 - 127	5	25
Bis(2-ethylhexyl) phthalate	20.0	19.3		ug/L		97	29 - 137	6	50
N-Nitrosodimethylamine	20.0	10.5		ug/L		52	20 - 120	7	21
Pentachlorophenol	20.0	10.2		ug/L		51	38 - 152	3	52

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*73*		*31 - 120*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-310496/3-A
Matrix: Water
Analysis Batch: 311097

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 310496

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Phenol-d6 (Surr)	*33*		*10 - 120*
p-Terphenyl-d14 (Surr)	*86*		*45 - 120*
2,4,6-Tribromophenol	*87*		*28 - 127*
2-Fluorophenol	*47*		*17 - 120*
Nitrobenzene-d5	*68*		*27 - 120*

Method: 608.3 - Organochlorine Pesticides in Water

Lab Sample ID: MB 570-310287/1-A
Matrix: Water
Analysis Batch: 310461

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 310287

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		03/09/23 12:21	03/10/23 17:22	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*36*		*20 - 139*	*03/09/23 12:21*	*03/10/23 17:22*	*1*
DCB Decachlorobiphenyl (Surr)	*61*		*20 - 154*	*03/09/23 12:21*	*03/10/23 17:22*	*1*

Lab Sample ID: LCS 570-310287/2-A
Matrix: Water
Analysis Batch: 311052

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 310287

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
alpha-BHC			0.0333	0.0183		ug/L		55	37 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*53*		*20 - 139*
DCB Decachlorobiphenyl (Surr)	*72*		*20 - 154*

Lab Sample ID: LCSD 570-310287/3-A
Matrix: Water
Analysis Batch: 311052

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 310287

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
alpha-BHC			0.0333	0.0205		ug/L		62	37 - 140	11	36

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*63*		*20 - 139*
DCB Decachlorobiphenyl (Surr)	*77*		*20 - 154*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-309786/5
Matrix: Water
Analysis Batch: 309786

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			03/08/23 03:31	1
Nitrate as N	ND		0.10	0.020	mg/L			03/08/23 03:31	1

Lab Sample ID: LCS 570-309786/6
Matrix: Water
Analysis Batch: 309786

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.55		mg/L		102	90 - 110
Nitrate as N	5.00	4.90		mg/L		98	90 - 110

Lab Sample ID: LCSD 570-309786/7
Matrix: Water
Analysis Batch: 309786

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.55		mg/L		102	90 - 110	0	15
Nitrate as N	5.00	4.89		mg/L		98	90 - 110	0	15

Lab Sample ID: MB 570-309787/5
Matrix: Water
Analysis Batch: 309787

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			03/08/23 03:31	1
Sulfate	ND		1.0	0.24	mg/L			03/08/23 03:31	1

Lab Sample ID: LCS 570-309787/6
Matrix: Water
Analysis Batch: 309787

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	47.4		mg/L		95	90 - 110
Sulfate	50.0	48.4		mg/L		97	90 - 110

Lab Sample ID: LCSD 570-309787/7
Matrix: Water
Analysis Batch: 309787

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	47.4		mg/L		95	90 - 110	0	15
Sulfate	50.0	48.4		mg/L		97	90 - 110	0	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-310590/7
Matrix: Water
Analysis Batch: 310590

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/10/23 17:00	1

Lab Sample ID: LCS 570-310590/8
Matrix: Water
Analysis Batch: 310590

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	24.6		ug/L		98	85 - 115

Lab Sample ID: LCSD 570-310590/9
Matrix: Water
Analysis Batch: 310590

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	24.6		ug/L		98	85 - 115	0	15

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-309830/1-A
Matrix: Water
Analysis Batch: 309984

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 309830

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		03/08/23 08:49	03/08/23 11:45	1
Copper	ND		2.0	0.32	ug/L		03/08/23 08:49	03/08/23 11:45	1
Lead	ND		1.0	0.12	ug/L		03/08/23 08:49	03/08/23 11:45	1
Selenium	ND		2.0	0.52	ug/L		03/08/23 08:49	03/08/23 11:45	1
Zinc	ND		20	2.8	ug/L		03/08/23 08:49	03/08/23 11:45	1

Lab Sample ID: LCS 570-309830/2-A
Matrix: Water
Analysis Batch: 309984

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 309830

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	81.1		ug/L		101	85 - 115
Copper	80.0	81.4		ug/L		102	85 - 115
Lead	80.0	83.3		ug/L		104	85 - 115
Selenium	80.0	80.9		ug/L		101	85 - 115
Zinc	80.0	78.8		ug/L		99	85 - 115

Lab Sample ID: LCSD 570-309830/3-A
Matrix: Water
Analysis Batch: 309984

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 309830

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	79.3		ug/L		99	85 - 115	2	20
Copper	80.0	80.1		ug/L		100	85 - 115	2	20
Lead	80.0	82.1		ug/L		103	85 - 115	1	20
Selenium	80.0	77.9		ug/L		97	85 - 115	4	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-309830/3-A
Matrix: Water
Analysis Batch: 309984

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 309830

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Zinc			80.0	77.2		ug/L		96	85 - 115	2	20

Lab Sample ID: 570-130128-1 MS
Matrix: Water
Analysis Batch: 309984

Client Sample ID: Outfall018_20230307_Comp
Prep Type: Total Recoverable
Prep Batch: 309830

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND		80.0	78.4		ug/L		98	80 - 120
Copper	2.2		80.0	79.6		ug/L		97	80 - 120
Lead	ND		80.0	78.8		ug/L		99	80 - 120
Selenium	ND		80.0	78.7		ug/L		98	80 - 120
Zinc	ND		80.0	75.6		ug/L		95	80 - 120

Lab Sample ID: 570-130128-1 MSD
Matrix: Water
Analysis Batch: 309984

Client Sample ID: Outfall018_20230307_Comp
Prep Type: Total Recoverable
Prep Batch: 309830

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND		80.0	81.8		ug/L		102	80 - 120	4	20
Copper	2.2		80.0	82.0		ug/L		100	80 - 120	3	20
Lead	ND		80.0	81.4		ug/L		102	80 - 120	3	20
Selenium	ND		80.0	80.8		ug/L		101	80 - 120	3	20
Zinc	ND		80.0	77.9		ug/L		97	80 - 120	3	20

Lab Sample ID: MB 570-309983/1-A
Matrix: Water
Analysis Batch: 310023

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L			03/08/23 14:29	1
Copper	ND		2.0	0.32	ug/L			03/08/23 14:29	1
Lead	ND		1.0	0.12	ug/L			03/08/23 14:29	1
Selenium	ND		2.0	0.52	ug/L			03/08/23 14:29	1
Zinc	ND		20	2.8	ug/L			03/08/23 14:29	1

Lab Sample ID: LCS 570-309983/2-A
Matrix: Water
Analysis Batch: 310023

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium			80.0	73.5		ug/L		92	85 - 115
Copper			80.0	75.3		ug/L		94	85 - 115
Lead			80.0	78.0		ug/L		98	85 - 115
Selenium			80.0	74.3		ug/L		93	85 - 115
Zinc			80.0	71.1		ug/L		89	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-309983/3-A
Matrix: Water
Analysis Batch: 310023

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium			80.0	71.0		ug/L		89	85 - 115	3	20
Copper			80.0	73.2		ug/L		91	85 - 115	3	20
Lead			80.0	75.9		ug/L		95	85 - 115	3	20
Selenium			80.0	71.1		ug/L		89	85 - 115	4	20
Zinc			80.0	68.7		ug/L		86	85 - 115	3	20

Lab Sample ID: 570-130128-3 MS
Matrix: Water
Analysis Batch: 310023

Client Sample ID: Outfall018_20230307_Comp_F
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Cadmium	ND	BU	80.0	70.1	BU	ug/L		88	80 - 120		
Copper	2.0	BU	80.0	72.1	BU	ug/L		88	80 - 120		
Lead	ND	BU	80.0	72.4	BU	ug/L		90	80 - 120		
Selenium	ND	BU	80.0	76.6	BU	ug/L		96	80 - 120		
Zinc	ND	BU	80.0	68.4	BU	ug/L		85	80 - 120		

Lab Sample ID: 570-130128-3 MSD
Matrix: Water
Analysis Batch: 310023

Client Sample ID: Outfall018_20230307_Comp_F
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND	BU	80.0	70.3	BU	ug/L		88	80 - 120	0	20
Copper	2.0	BU	80.0	72.0	BU	ug/L		88	80 - 120	0	20
Lead	ND	BU	80.0	72.0	BU	ug/L		90	80 - 120	0	20
Selenium	ND	BU	80.0	77.4	BU	ug/L		97	80 - 120	1	20
Zinc	ND	BU	80.0	68.3	BU	ug/L		85	80 - 120	0	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-310131/1-A
Matrix: Water
Analysis Batch: 310669

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 310131

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/08/23 22:22	03/10/23 12:50	1

Lab Sample ID: LCS 570-310131/2-A
Matrix: Water
Analysis Batch: 310669

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 310131

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			8.00	8.74		ug/L		109	85 - 115		

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: LCSD 570-310131/3-A
Matrix: Water
Analysis Batch: 310669
Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 310131

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			8.00	8.77		ug/L		110	85 - 115	0	10

Lab Sample ID: 570-130128-1 MS
Matrix: Water
Analysis Batch: 310669
Client Sample ID: Outfall018_20230307_Comp
Prep Type: Total/NA
Prep Batch: 310131

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	ND		8.00	8.70		ug/L		109	85 - 115		

Lab Sample ID: 570-130128-1 MSD
Matrix: Water
Analysis Batch: 310669
Client Sample ID: Outfall018_20230307_Comp
Prep Type: Total/NA
Prep Batch: 310131

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		8.00	8.72		ug/L		109	85 - 115	0	10

Lab Sample ID: MB 570-309778/1-B
Matrix: Water
Analysis Batch: 310669
Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 309780

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/08/23 17:10	03/10/23 14:10	1

Lab Sample ID: LCS 570-309778/2-B
Matrix: Water
Analysis Batch: 310669
Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 309780

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			8.00	8.29		ug/L		104	85 - 115		

Lab Sample ID: LCSD 570-309778/3-B
Matrix: Water
Analysis Batch: 310669
Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 309780

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			8.00	8.64		ug/L		108	85 - 115	4	10

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-311129/5-A
Matrix: Water
Analysis Batch: 311145
Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 311129

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		03/13/23 13:40	03/13/23 15:19	1

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: LCS 570-311129/6-A
Matrix: Water
Analysis Batch: 311145

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 311129

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	0.500	0.518		mg/L		104	90 - 110

Lab Sample ID: LCSD 570-311129/7-A
Matrix: Water
Analysis Batch: 311145

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 311129

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	0.500	0.498		mg/L		100	90 - 110	4	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-312131/14
Matrix: Water
Analysis Batch: 312131

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			03/14/23 19:36	1

Lab Sample ID: LCS 570-312131/16
Matrix: Water
Analysis Batch: 312131

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	252		ug/L		101	90 - 110

Lab Sample ID: LCSD 570-312131/17
Matrix: Water
Analysis Batch: 312131

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	250	266		ug/L		107	90 - 110	5	20

Lab Sample ID: MRL 570-312131/13
Matrix: Water
Analysis Batch: 312131

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	6.06		ug/L		121	50 - 150

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-309933/1
Matrix: Water
Analysis Batch: 309933

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	1000	1000		NTU		100.6	99.0 - 101.0

Method: SM 2130B - Turbidity (Continued)

Lab Sample ID: LCSSRM 570-309933/2
Matrix: Water
Analysis Batch: 309933

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	10.0	10		NTU		101.0	99.0 - 101.0

Lab Sample ID: LCSSRM 570-309933/3
Matrix: Water
Analysis Batch: 309933

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-311135/1
Matrix: Water
Analysis Batch: 311135

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			03/13/23 16:32	1

Lab Sample ID: LCS 570-311135/2
Matrix: Water
Analysis Batch: 311135

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	980		mg/L		98	84 - 108

Lab Sample ID: LCSD 570-311135/3
Matrix: Water
Analysis Batch: 311135

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	972		mg/L		97	84 - 108	1	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-310629/1
Matrix: Water
Analysis Batch: 310629

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			03/10/23 12:07	1

Lab Sample ID: LCS 570-310629/2
Matrix: Water
Analysis Batch: 310629

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	102		mg/L		102	77 - 116

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCSD 570-310629/3
Matrix: Water
Analysis Batch: 310629

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	101		mg/L		101	77 - 116	1	10

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: LCS 570-309842/2-A
Matrix: Water
Analysis Batch: 311089

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 309842

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Biochemical Oxygen Demand			199	198		mg/L		100	84.6 - 115.4		

Lab Sample ID: SCB 570-311089/3
Matrix: Water
Analysis Batch: 311089

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	SCB Result	SCB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		0.0000020	0.0000010	mg/L			03/08/23 09:18	1

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-310315/5-A
Matrix: Water
Analysis Batch: 310028

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 310315

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.20	0.050	mg/L		03/08/23 13:18	03/08/23 15:21	1

Lab Sample ID: LCS 570-310315/6-A
Matrix: Water
Analysis Batch: 310028

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 310315

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
MBAS			0.500	0.445		mg/L		89	83 - 122		

Lab Sample ID: LCSD 570-310315/7-A
Matrix: Water
Analysis Batch: 310028

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 310315

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS			0.500	0.459		mg/L		92	83 - 122	3	10

Lab Sample ID: 570-130128-1 MS
Matrix: Water
Analysis Batch: 310028

Client Sample ID: Outfall018_20230307_Comp
Prep Type: Total/NA
Prep Batch: 310315

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
MBAS	0.069	J,DX	0.500	0.417		mg/L		70	64 - 141		

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-1

Method: SM 5540C - Methylene Blue Active Substances (MBAS) (Continued)

Lab Sample ID: 570-130128-1 MSD
Matrix: Water
Analysis Batch: 310028

Client Sample ID: Outfall018_20230307_Comp
Prep Type: Total/NA
Prep Batch: 310315

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS	0.069	J,DX	0.500	0.418		mg/L		70	64 - 141	0	10

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-1

GC/MS Semi VOA

Prep Batch: 310496

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	625	
MB 570-310496/1-A	Method Blank	Total/NA	Water	625	
LCS 570-310496/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-310496/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 311097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	625.1 SIM	310496
MB 570-310496/1-A	Method Blank	Total/NA	Water	625.1 SIM	310496
LCS 570-310496/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	310496
LCSD 570-310496/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	310496

GC Semi VOA

Prep Batch: 310287

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	608	
MB 570-310287/1-A	Method Blank	Total/NA	Water	608	
LCS 570-310287/2-A	Lab Control Sample	Total/NA	Water	608	
LCSD 570-310287/3-A	Lab Control Sample Dup	Total/NA	Water	608	

Analysis Batch: 310461

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-310287/1-A	Method Blank	Total/NA	Water	608.3	310287

Analysis Batch: 311052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	608.3	310287
LCS 570-310287/2-A	Lab Control Sample	Total/NA	Water	608.3	310287
LCSD 570-310287/3-A	Lab Control Sample Dup	Total/NA	Water	608.3	310287

HPLC/IC

Analysis Batch: 309786

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	300.0	
MB 570-309786/5	Method Blank	Total/NA	Water	300.0	
LCS 570-309786/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-309786/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 309787

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	300.0	
570-130128-1 - DL	Outfall018_20230307_Comp	Total/NA	Water	300.0	
MB 570-309787/5	Method Blank	Total/NA	Water	300.0	
LCS 570-309787/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-309787/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 310590

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	314.0	

HPLC/IC (Continued)

Analysis Batch: 310590 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-310590/7	Method Blank	Total/NA	Water	314.0	
LCS 570-310590/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-310590/9	Lab Control Sample Dup	Total/NA	Water	314.0	

Analysis Batch: 310704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	NO2NO3 Calc	

Metals

Filtration Batch: 309778

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-3	Outfall018_20230307_Comp_F	Dissolved	Water	Filtration	
MB 570-309778/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-309778/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-309778/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	

Prep Batch: 309780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-3	Outfall018_20230307_Comp_F	Dissolved	Water	245.1	309778
MB 570-309778/1-B	Method Blank	Dissolved	Water	245.1	309778
LCS 570-309778/2-B	Lab Control Sample	Dissolved	Water	245.1	309778
LCSD 570-309778/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	309778

Prep Batch: 309830

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total Recoverable	Water	200.8	
MB 570-309830/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-309830/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-309830/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-130128-1 MS	Outfall018_20230307_Comp	Total Recoverable	Water	200.8	
570-130128-1 MSD	Outfall018_20230307_Comp	Total Recoverable	Water	200.8	

Filtration Batch: 309983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-3	Outfall018_20230307_Comp_F	Dissolved	Water	Filtration	
MB 570-309983/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-309983/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-309983/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-130128-3 MS	Outfall018_20230307_Comp_F	Dissolved	Water	Filtration	
570-130128-3 MSD	Outfall018_20230307_Comp_F	Dissolved	Water	Filtration	

Analysis Batch: 309984

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total Recoverable	Water	200.8	309830
MB 570-309830/1-A	Method Blank	Total Recoverable	Water	200.8	309830
LCS 570-309830/2-A	Lab Control Sample	Total Recoverable	Water	200.8	309830
LCSD 570-309830/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	309830
570-130128-1 MS	Outfall018_20230307_Comp	Total Recoverable	Water	200.8	309830
570-130128-1 MSD	Outfall018_20230307_Comp	Total Recoverable	Water	200.8	309830

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-1

Metals

Analysis Batch: 310023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-3	Outfall018_20230307_Comp_F	Dissolved	Water	200.8	309983
MB 570-309983/1-A	Method Blank	Dissolved	Water	200.8	309983
LCS 570-309983/2-A	Lab Control Sample	Dissolved	Water	200.8	309983
LCSD 570-309983/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	309983
570-130128-3 MS	Outfall018_20230307_Comp_F	Dissolved	Water	200.8	309983
570-130128-3 MSD	Outfall018_20230307_Comp_F	Dissolved	Water	200.8	309983

Prep Batch: 310131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	245.1	
MB 570-310131/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-310131/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-310131/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
570-130128-1 MS	Outfall018_20230307_Comp	Total/NA	Water	245.1	
570-130128-1 MSD	Outfall018_20230307_Comp	Total/NA	Water	245.1	

Analysis Batch: 310669

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	245.1	310131
570-130128-3	Outfall018_20230307_Comp_F	Dissolved	Water	245.1	309780
MB 570-309778/1-B	Method Blank	Dissolved	Water	245.1	309780
MB 570-310131/1-A	Method Blank	Total/NA	Water	245.1	310131
LCS 570-309778/2-B	Lab Control Sample	Dissolved	Water	245.1	309780
LCS 570-310131/2-A	Lab Control Sample	Total/NA	Water	245.1	310131
LCSD 570-309778/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	309780
LCSD 570-310131/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	310131
570-130128-1 MS	Outfall018_20230307_Comp	Total/NA	Water	245.1	310131
570-130128-1 MSD	Outfall018_20230307_Comp	Total/NA	Water	245.1	310131

General Chemistry

Prep Batch: 309842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	BOD Prep	
LCS 570-309842/2-A	Lab Control Sample	Total/NA	Water	BOD Prep	

Analysis Batch: 309933

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	SM 2130B	
LCSSRM 570-309933/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-309933/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-309933/3	Lab Control Sample	Total/NA	Water	SM 2130B	

Analysis Batch: 310028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	SM 5540C	310315
MB 570-310315/5-A	Method Blank	Total/NA	Water	SM 5540C	310315
LCS 570-310315/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	310315
LCSD 570-310315/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	310315
570-130128-1 MS	Outfall018_20230307_Comp	Total/NA	Water	SM 5540C	310315

General Chemistry (Continued)

Analysis Batch: 310028 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1 MSD	Outfall018_20230307_Comp	Total/NA	Water	SM 5540C	310315

Prep Batch: 310315

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	SM 5540C	
MB 570-310315/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-310315/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-310315/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	
570-130128-1 MS	Outfall018_20230307_Comp	Total/NA	Water	SM 5540C	
570-130128-1 MSD	Outfall018_20230307_Comp	Total/NA	Water	SM 5540C	

Analysis Batch: 310629

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	SM 2540D	
MB 570-310629/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-310629/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-310629/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 311089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	SM 5210B	309842
SCB 570-311089/3	Method Blank	Total/NA	Water	SM 5210B	
LCS 570-309842/2-A	Lab Control Sample	Total/NA	Water	SM 5210B	309842

Prep Batch: 311129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	Distill/Ammonia	
MB 570-311129/5-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-311129/6-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-311129/7-A	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 311135

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	SM 2540C	
MB 570-311135/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-311135/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-311135/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 311145

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	350.1	311129
MB 570-311129/5-A	Method Blank	Total/NA	Water	350.1	311129
LCS 570-311129/6-A	Lab Control Sample	Total/NA	Water	350.1	311129
LCSD 570-311129/7-A	Lab Control Sample Dup	Total/NA	Water	350.1	311129

Analysis Batch: 312131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	Kelada 01	
MB 570-312131/14	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-312131/16	Lab Control Sample	Total/NA	Water	Kelada 01	

General Chemistry (Continued)

Analysis Batch: 312131 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 570-312131/17	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-312131/13	Lab Control Sample	Total/NA	Water	Kelada 01	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-1

Client Sample ID: Outfall018_20230307_Comp

Date Collected: 03/07/23 09:10
Date Received: 03/07/23 18:00

Lab Sample ID: 570-130128-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			1055.9 mL	2 mL	310496	03/10/23 12:12	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	311097	03/13/23 23:16	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Prep	608			1500 mL	1 mL	310287	03/09/23 12:21	H1SH	EET CAL 4
Total/NA	Analysis	608.3		1	1 mL	1 mL	311052	03/13/23 23:13	N5Y3	EET CAL 4
	Instrument ID: GC52A									
Total/NA	Analysis	300.0		1	4 mL	4 mL	309786	03/08/23 07:29	UIP1	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	300.0		1	4 mL	4 mL	309787	03/08/23 07:29	UIP1	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	300.0	DL	10	4 mL	4 mL	309787	03/08/23 10:18	UIP1	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	314.0		1	4 mL	4 mL	310590	03/10/23 23:37	PS	EET CAL 4
	Instrument ID: IC8									
Total/NA	Analysis	NO2NO3 Calc		1			310704	03/10/23 16:06	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total Recoverable	Prep	200.8			50 mL	50 mL	309830	03/08/23 08:49	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			309984	03/08/23 12:03	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Prep	245.1			25 mL	50 mL	310131	03/08/23 22:22	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			310669	03/10/23 13:07	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	311129	03/13/23 13:40	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	311145	03/13/23 15:52	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	312131	03/14/23 19:36	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			309933	03/08/23 12:53	ZVB7	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	311135	03/13/23 16:32	ZL7L	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	310629	03/10/23 12:07	WVA4	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Prep	BOD Prep					309842	03/08/23 16:04	U7UR	EET CAL 4
Total/NA	Analysis	SM 5210B		1	300 mL	300 mL	311089	03/08/23 16:43	TN8Z	EET CAL 4
	Instrument ID: BOD3									
Total/NA	Prep	SM 5540C			100 mL	100 mL	310315	03/08/23 13:18	TXA8	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	310028	03/08/23 15:26	TXA8	EET CAL 4
	Instrument ID: UV8									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-1

Client Sample ID: Outfall018_20230307_Comp_F

Date Collected: 03/07/23 09:10
Date Received: 03/07/23 18:00

Lab Sample ID: 570-130128-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	309983	03/08/23 13:45	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			310023	03/08/23 14:35	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Dissolved	Filtration	Filtration			25 mL	25 mL	309778	03/08/23 00:17	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	309780	03/08/23 17:10	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			310669	03/10/23 14:15	C0YH	EET CAL 4
	Instrument ID: HG8									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-130128-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-1

Method	Method Description	Protocol	Laboratory
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
608.3	Organochlorine Pesticides in Water	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 5210B	BOD, 5-Day	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
608	Liquid-Liquid Extraction (Separatory Funnel)	EPA	EET CAL 4
625	Liquid-Liquid Extraction	EPA	EET CAL 4
BOD Prep	Preparation, BOD	SM	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-130128-1	Outfall018_20230307_Comp	Water	03/07/23 09:10	03/07/23 18:00
570-130128-3	Outfall018_20230307_Comp_F	Water	03/07/23 09:10	03/07/23 18:00

130128

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-130128 Chain of Custody

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel: 714-895-5494 **ECI Project #57013187**	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

									ANALYSIS REQUIRED															
									R	R	R	R	R	R	R	R	R	R	R	C				
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl-, SO_4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	Turbidity, TDS (SM2540C/E160.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)				Comments
1 Outfall 018	Outfall018_20230307_Comp	3/7/2023 /0910	WM	500 mL Poly	1	HNO_3	90	Yes	X										X					
			WM	1 L Glass Amber	2	None	110	No		X														
			WM	1L Poly	1	None	115	No			X													
			WM	500 mL Poly	2	None	120	No				X												
			WM	500 mL Poly	2	None	130	No					X											48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X										48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X								
			WM	1 L Glass Amber	2	None	170	No									X							
			WM	1 L Glass Amber	2	None	180	No										X						
			WM	1L Poly	1	None	185	No							X									
2	Outfall018_20230307_Comp_Extra	3/7/2023 /0910	WM	1 L Glass Amber	2	None	110	No		H														Hold
			~~WM~~	~~500 mL Poly~~	~~2~~	~~None~~	~~120~~	~~No~~				H												Hold
			~~WM~~	~~500 mL Poly~~	~~2~~	~~None~~	~~130~~	~~No~~					H											Hold
			WM	1 L Glass Amber	2	None	170	No									H							Hold
			WM	1 L Glass Amber	2	None	180	No											H					Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
	3-7-2023 / 13:30	H&A	EC	3-7-23 1330
Relinquished By	Date/Time:	Company:	Received By	Date/Time:
	3-7-23 18:00	EC	EC	3-7-23 18:00
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

2.0/2.0 1.4/1.4 SCII

2019-2020 Rainy Season
Version 4

130128

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel: 714-895-5494 **ECI Project #57013187**	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED													
									R	R	R	R	R	C								
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)		Total Dissolved Metals: Mercury (E245.1)								
3 Outfall 018	Outfall018_20230307_Comp_F	3/7/2023 / 0910	WM	1L Poly	1	None	200	Yes	X													
			WM	borosilicate vials	1	None	320	No					X									Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
1	Outfall018_20230307_Comp	3/7/2023 / 0910	WM	500 mL Poly	1	NaOH	220	No		X												
			WM	2.5 Gal Cube	1	None	225	No			X											Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No														

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	3-7-2023 / 13:30	H.A	[signature] EC	3-7-23 13:30
[signature]	3-7-23 18:00	EC	[signature] EC	3-7-23 18:00

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

2019-2020 Rainy Season
Version 4

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-130128-1

Login Number: 130128
List Number: 1
Creator: Cruise, Noel

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall - 018 - Comp

JOB NUMBER

570-130128-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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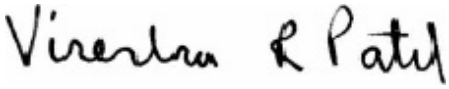

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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-130128-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-130128-2

Comments
No additional comments.

Receipt
The samples were received on 3/7/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.0º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: Outfall018_20230307_Comp (570-130128-1), (CCV 320-664654/2), (LCS 320-663889/2-A), (LCSD 320-663889/3-A) and (MB 320-663889/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-130128-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Client Sample ID: Outfall018_20230307_Comp
Lab Sample ID: 570-130128-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	0.0000013	J,DX q MB	0.000048	0.000000043	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.00000046	J,DX q	0.000048	0.000000057	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000017	J,DX MB	0.000048	0.000000040	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000011	J,DX MB	0.000048	0.000000067	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.00000031	J,DX q MB	0.000048	0.000000062	ug/L	1		1613B	Total/NA
OCDD	0.0000083	J,DX MB	0.000095	0.000000027	ug/L	1		1613B	Total/NA
OCDF	0.0000011	J,DX q MB	0.000095	0.000000081	ug/L	1		1613B	Total/NA
Total PeCDD	0.0000012	J,DX q	0.000048	0.000000031	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000013	J,DX q MB	0.000048	0.000000040	ug/L	1		1613B	Total/NA
Total HxCDF	0.00000046	J,DX q MB	0.000048	0.000000055	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000030	J,DX q MB	0.000048	0.000000040	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000018	J,DX q MB	0.000048	0.000000062	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: Outfall018_20230307_Comp
Date Collected: 03/07/23 09:10
Date Received: 03/07/23 18:00

Lab Sample ID: 570-130128-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000095	0.00000002	ug/L		03/28/23 14:11	03/31/23 02:34	1
2,3,7,8-TCDF	ND		0.0000095	0.00000004	ug/L		03/28/23 14:11	03/31/23 02:34	1
1,2,3,7,8-PeCDD	ND		0.000048	0.00000003	ug/L		03/28/23 14:11	03/31/23 02:34	1
1,2,3,7,8-PeCDF	ND		0.000048	0.00000008	ug/L		03/28/23 14:11	03/31/23 02:34	1
2,3,4,7,8-PeCDF	ND		0.000048	0.00000009	ug/L		03/28/23 14:11	03/31/23 02:34	1
1,2,3,4,7,8-HxCDD	**0.0000013**	**J,DX q MB**	0.000048	0.00000004	ug/L		03/28/23 14:11	03/31/23 02:34	1
1,2,3,6,7,8-HxCDD	ND		0.000048	0.00000004	ug/L		03/28/23 14:11	03/31/23 02:34	1
1,2,3,7,8,9-HxCDD	ND		0.000048	0.00000004	ug/L		03/28/23 14:11	03/31/23 02:34	1
1,2,3,4,7,8-HxCDF	ND		0.000048	0.00000005	ug/L		03/28/23 14:11	03/31/23 02:34	1
1,2,3,6,7,8-HxCDF	ND		0.000048	0.00000005	ug/L		03/28/23 14:11	03/31/23 02:34	1
1,2,3,7,8,9-HxCDF	**0.00000046**	**J,DX q**	0.000048	0.00000005	ug/L		03/28/23 14:11	03/31/23 02:34	1
2,3,4,6,7,8-HxCDF	ND		0.000048	0.00000005	ug/L		03/28/23 14:11	03/31/23 02:34	1
1,2,3,4,6,7,8-HpCDD	**0.0000017**	**J,DX MB**	0.000048	0.00000004	ug/L		03/28/23 14:11	03/31/23 02:34	1
1,2,3,4,6,7,8-HpCDF	**0.0000011**	**J,DX MB**	0.000048	0.00000006	ug/L		03/28/23 14:11	03/31/23 02:34	1
1,2,3,4,7,8,9-HpCDF	**0.00000031**	**J,DX q MB**	0.000048	0.00000006	ug/L		03/28/23 14:11	03/31/23 02:34	1
OCDD	**0.0000083**	**J,DX MB**	0.000095	0.00000002	ug/L		03/28/23 14:11	03/31/23 02:34	1
OCDF	**0.0000011**	**J,DX q MB**	0.000095	0.00000008	ug/L		03/28/23 14:11	03/31/23 02:34	1
Total TCDD	ND		0.0000095	0.00000002	ug/L		03/28/23 14:11	03/31/23 02:34	1
Total TCDF	ND		0.0000095	0.00000004	ug/L		03/28/23 14:11	03/31/23 02:34	1
Total PeCDD	**0.0000012**	**J,DX q**	0.000048	0.00000003	ug/L		03/28/23 14:11	03/31/23 02:34	1
Total PeCDF	ND		0.000048	0.00000008	ug/L		03/28/23 14:11	03/31/23 02:34	1
Total HxCDD	**0.0000013**	**J,DX q MB**	0.000048	0.00000004	ug/L		03/28/23 14:11	03/31/23 02:34	1
Total HxCDF	**0.00000046**	**J,DX q MB**	0.000048	0.00000005	ug/L		03/28/23 14:11	03/31/23 02:34	1
Total HpCDD	**0.0000030**	**J,DX q MB**	0.000048	0.00000004	ug/L		03/28/23 14:11	03/31/23 02:34	1
Total HpCDF	**0.0000018**	**J,DX q MB**	0.000048	0.00000006	ug/L		03/28/23 14:11	03/31/23 02:34	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*74*		*25 - 164*	*03/28/23 14:11*	*03/31/23 02:34*	*1*
13C-2,3,7,8-TCDF	*71*		*24 - 169*	*03/28/23 14:11*	*03/31/23 02:34*	*1*
13C-1,2,3,7,8-PeCDD	*77*		*25 - 181*	*03/28/23 14:11*	*03/31/23 02:34*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: Outfall018_20230307_Comp
Lab Sample ID: 570-130128-1
Date Collected: 03/07/23 09:10
Matrix: Water
Date Received: 03/07/23 18:00

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDF	71		24 - 185	03/28/23 14:11	03/31/23 02:34	1
13C-2,3,4,7,8-PeCDF	68		21 - 178	03/28/23 14:11	03/31/23 02:34	1
13C-1,2,3,4,7,8-HxCDD	72		32 - 141	03/28/23 14:11	03/31/23 02:34	1
13C-1,2,3,6,7,8-HxCDD	70		28 - 130	03/28/23 14:11	03/31/23 02:34	1
13C-1,2,3,4,7,8-HxCDF	74		26 - 152	03/28/23 14:11	03/31/23 02:34	1
13C-1,2,3,6,7,8-HxCDF	71		26 - 123	03/28/23 14:11	03/31/23 02:34	1
13C-1,2,3,7,8,9-HxCDF	75		29 - 147	03/28/23 14:11	03/31/23 02:34	1
13C-2,3,4,6,7,8-HxCDF	75		28 - 136	03/28/23 14:11	03/31/23 02:34	1
13C-1,2,3,4,6,7,8-HpCDD	77		23 - 140	03/28/23 14:11	03/31/23 02:34	1
13C-1,2,3,4,6,7,8-HpCDF	64		28 - 143	03/28/23 14:11	03/31/23 02:34	1
13C-1,2,3,4,7,8,9-HpCDF	77		26 - 138	03/28/23 14:11	03/31/23 02:34	1
13C-OCDD	78		17 - 157	03/28/23 14:11	03/31/23 02:34	1
13C-OCDF	76		17 - 157	03/28/23 14:11	03/31/23 02:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	95		35 - 197	03/28/23 14:11	03/31/23 02:34	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-130128-1	Outfall018_20230307_Comp	95
MB 320-663889/1-A	Method Blank	93

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-663889/2-A	Lab Control Sample	93
LCSD 320-663889/3-A	Lab Control Sample Dup	95

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-130128-1	Outfall018_20230307_Comp	74	71	77	71	68	72	70	74
MB 320-663889/1-A	Method Blank	66	65	70	61	59	62	61	59

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-130128-1	Outfall018_20230307_Comp	71	75	75	77	64	77	78	76
MB 320-663889/1-A	Method Blank	59	65	64	68	57	65	65	63

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-663889/2-A	Lab Control Sample	65	52	69	62	61	60	60	58
LCSD 320-663889/3-A	Lab Control Sample Dup	75	69	82	77	73	74	75	69

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-663889/2-A	Lab Control Sample	57	63	62	69	46	65	67	67
LCSD 320-663889/3-A	Lab Control Sample Dup	70	76	75	85	68	79	82	80

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-130128-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 -
Comp

HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-663889/1-A
Matrix: Water
Analysis Batch: 664654

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 663889

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.000000093	ug/L		03/28/23 14:11	03/30/23 21:45	1
2,3,7,8-TCDF	ND		0.000010	0.000000059	ug/L		03/28/23 14:11	03/30/23 21:45	1
1,2,3,7,8-PeCDD	ND		0.000050	0.000000065	ug/L		03/28/23 14:11	03/30/23 21:45	1
1,2,3,7,8-PeCDF	ND		0.000050	0.000000029	ug/L		03/28/23 14:11	03/30/23 21:45	1
2,3,4,7,8-PeCDF	ND		0.000050	0.000000033	ug/L		03/28/23 14:11	03/30/23 21:45	1
1,2,3,4,7,8-HxCDD	0.00000214	J,DX	0.000050	0.000000052	ug/L		03/28/23 14:11	03/30/23 21:45	1
1,2,3,6,7,8-HxCDD	ND		0.000050	0.000000055	ug/L		03/28/23 14:11	03/30/23 21:45	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.000000049	ug/L		03/28/23 14:11	03/30/23 21:45	1
1,2,3,4,7,8-HxCDF	0.000000586	J,DX q	0.000050	0.00000010	ug/L		03/28/23 14:11	03/30/23 21:45	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000010	ug/L		03/28/23 14:11	03/30/23 21:45	1
1,2,3,7,8,9-HxCDF	ND		0.000050	0.000000099	ug/L		03/28/23 14:11	03/30/23 21:45	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.000000090	ug/L		03/28/23 14:11	03/30/23 21:45	1
1,2,3,4,6,7,8-HpCDD	0.00000179	J,DX q	0.000050	0.000000091	ug/L		03/28/23 14:11	03/30/23 21:45	1
1,2,3,4,6,7,8-HpCDF	0.00000167	J,DX q	0.000050	0.00000017	ug/L		03/28/23 14:11	03/30/23 21:45	1
1,2,3,4,7,8,9-HpCDF	0.00000117	J,DX q	0.000050	0.00000018	ug/L		03/28/23 14:11	03/30/23 21:45	1
OCDD	0.0000102	J,DX q	0.00010	0.00000040	ug/L		03/28/23 14:11	03/30/23 21:45	1
OCDF	0.00000355	J,DX	0.00010	0.00000065	ug/L		03/28/23 14:11	03/30/23 21:45	1
Total TCDD	0.00000241	J,DX q	0.000010	0.000000093	ug/L		03/28/23 14:11	03/30/23 21:45	1
Total TCDF	ND		0.000010	0.000000059	ug/L		03/28/23 14:11	03/30/23 21:45	1
Total PeCDD	ND		0.000050	0.000000065	ug/L		03/28/23 14:11	03/30/23 21:45	1
Total PeCDF	ND		0.000050	0.000000029	ug/L		03/28/23 14:11	03/30/23 21:45	1
Total HxCDD	0.00000214	J,DX	0.000050	0.000000049	ug/L		03/28/23 14:11	03/30/23 21:45	1
Total HxCDF	0.000000586	J,DX q	0.000050	0.000000090	ug/L		03/28/23 14:11	03/30/23 21:45	1
Total HpCDD	0.00000330	J,DX q	0.000050	0.000000091	ug/L		03/28/23 14:11	03/30/23 21:45	1
Total HpCDF	0.00000285	J,DX q	0.000050	0.00000017	ug/L		03/28/23 14:11	03/30/23 21:45	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*66*		*25 - 164*	*03/28/23 14:11*	*03/30/23 21:45*	*1*
13C-2,3,7,8-TCDF	*65*		*24 - 169*	*03/28/23 14:11*	*03/30/23 21:45*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-663889/1-A
Matrix: Water
Analysis Batch: 664654

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 663889

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDD	70		25 - 181	03/28/23 14:11	03/30/23 21:45	1
13C-1,2,3,7,8-PeCDF	61		24 - 185	03/28/23 14:11	03/30/23 21:45	1
13C-2,3,4,7,8-PeCDF	59		21 - 178	03/28/23 14:11	03/30/23 21:45	1
13C-1,2,3,4,7,8-HxCDD	62		32 - 141	03/28/23 14:11	03/30/23 21:45	1
13C-1,2,3,6,7,8-HxCDD	61		28 - 130	03/28/23 14:11	03/30/23 21:45	1
13C-1,2,3,4,7,8-HxCDF	59		26 - 152	03/28/23 14:11	03/30/23 21:45	1
13C-1,2,3,6,7,8-HxCDF	59		26 - 123	03/28/23 14:11	03/30/23 21:45	1
13C-1,2,3,7,8,9-HxCDF	65		29 - 147	03/28/23 14:11	03/30/23 21:45	1
13C-2,3,4,6,7,8-HxCDF	64		28 - 136	03/28/23 14:11	03/30/23 21:45	1
13C-1,2,3,4,6,7,8-HpCDD	68		23 - 140	03/28/23 14:11	03/30/23 21:45	1
13C-1,2,3,4,6,7,8-HpCDF	57		28 - 143	03/28/23 14:11	03/30/23 21:45	1
13C-1,2,3,4,7,8,9-HpCDF	65		26 - 138	03/28/23 14:11	03/30/23 21:45	1
13C-OCDD	65		17 - 157	03/28/23 14:11	03/30/23 21:45	1
13C-OCDF	63		17 - 157	03/28/23 14:11	03/30/23 21:45	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	93		35 - 197	03/28/23 14:11	03/30/23 21:45	1

Lab Sample ID: LCS 320-663889/2-A
Matrix: Water
Analysis Batch: 664654

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 663889

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000195		ug/L		97	67 - 158
2,3,7,8-TCDF	0.000200	0.000208		ug/L		104	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.000888		ug/L		89	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.000890		ug/L		89	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000886		ug/L		89	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.000905		ug/L		91	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000921		ug/L		92	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000949		ug/L		95	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.000911		ug/L		91	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000915		ug/L		92	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.000907		ug/L		91	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000907		ug/L		91	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.000845		ug/L		85	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.000961		ug/L		96	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000898		ug/L		90	78 - 138
OCDD	0.00200	0.00183		ug/L		91	78 - 144
OCDF	0.00200	0.00184		ug/L		92	63 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	65		20 - 175
13C-2,3,7,8-TCDF	52		22 - 152
13C-1,2,3,7,8-PeCDD	69		21 - 227
13C-1,2,3,7,8-PeCDF	62		21 - 192
13C-2,3,4,7,8-PeCDF	61		13 - 328

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-663889/2-A
Matrix: Water
Analysis Batch: 664654

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 663889

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCDD	60		21 - 193
13C-1,2,3,6,7,8-HxCDD	60		25 - 163
13C-1,2,3,4,7,8-HxCDF	58		19 - 202
13C-1,2,3,6,7,8-HxCDF	57		21 - 159
13C-1,2,3,7,8,9-HxCDF	63		17 - 205
13C-2,3,4,6,7,8-HxCDF	62		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	69		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	46		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	65		20 - 186
13C-OCDD	67		13 - 199
13C-OCDF	67		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	93		31 - 191

Lab Sample ID: LCSD 320-663889/3-A
Matrix: Water
Analysis Batch: 664654

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 663889

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000195		ug/L		97	67 - 158	0	50
2,3,7,8-TCDF			0.000200	0.000211		ug/L		105	75 - 158	1	50
1,2,3,7,8-PeCDD			0.00100	0.000922		ug/L		92	70 - 142	4	50
1,2,3,7,8-PeCDF			0.00100	0.000887		ug/L		89	80 - 134	0	50
2,3,4,7,8-PeCDF			0.00100	0.000898		ug/L		90	68 - 160	1	50
1,2,3,4,7,8-HxCDD			0.00100	0.000889		ug/L		89	70 - 164	2	50
1,2,3,6,7,8-HxCDD			0.00100	0.000942		ug/L		94	76 - 134	2	50
1,2,3,7,8,9-HxCDD			0.00100	0.000940		ug/L		94	64 - 162	1	50
1,2,3,4,7,8-HxCDF			0.00100	0.000945		ug/L		94	72 - 134	4	50
1,2,3,6,7,8-HxCDF			0.00100	0.000930		ug/L		93	84 - 130	2	50
1,2,3,7,8,9-HxCDF			0.00100	0.000927		ug/L		93	78 - 130	2	50
2,3,4,6,7,8-HxCDF			0.00100	0.000925		ug/L		92	70 - 156	2	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000845		ug/L		85	70 - 140	0	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.000933		ug/L		93	82 - 122	3	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000904		ug/L		90	78 - 138	1	50
OCDD			0.00200	0.00184		ug/L		92	78 - 144	1	50
OCDF			0.00200	0.00188		ug/L		94	63 - 170	2	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	75		20 - 175
13C-2,3,7,8-TCDF	69		22 - 152
13C-1,2,3,7,8-PeCDD	82		21 - 227
13C-1,2,3,7,8-PeCDF	77		21 - 192
13C-2,3,4,7,8-PeCDF	73		13 - 328
13C-1,2,3,4,7,8-HxCDD	74		21 - 193
13C-1,2,3,6,7,8-HxCDD	75		25 - 163
13C-1,2,3,4,7,8-HxCDF	69		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-663889/3-A
Matrix: Water
Analysis Batch: 664654

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 663889

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	70		21 - 159
13C-1,2,3,7,8,9-HxCDF	76		17 - 205
13C-2,3,4,6,7,8-HxCDF	75		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	85		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	68		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	79		20 - 186
13C-OCDD	82		13 - 199
13C-OCDF	80		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	95		31 - 191

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-130128-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Specialty Organics

Prep Batch: 663889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	1613B	
MB 320-663889/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-663889/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-663889/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 664654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	1613B	663889
MB 320-663889/1-A	Method Blank	Total/NA	Water	1613B	663889
LCS 320-663889/2-A	Lab Control Sample	Total/NA	Water	1613B	663889
LCSD 320-663889/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	663889

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-2

Client Sample ID: Outfall018_20230307_Comp
Date Collected: 03/07/23 09:10
Date Received: 03/07/23 18:00

Lab Sample ID: 570-130128-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			1049.5 mL	20.0 uL	663889	03/28/23 14:11	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	664654	03/31/23 02:34	GRB	EET SAC
	Instrument ID: DFS 1									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-130128-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-24
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-24
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	02-28-26
Utah	NELAP	CA000442021-12	02-28-23 *
Virginia	NELAP	460278	03-14-24
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-2

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-130128-1	Outfall018_20230307_Comp	Water	03/07/23 09:10	03/07/23 18:00

130128

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-130128 Chain of Custody

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel: 714-895-5494 **ECI Project #57013187**	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

									ANALYSIS REQUIRED															
									R	R	R	R	R	R	R	R	R	R	R	C				
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl-, SO_4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	Turbidity, TDS (SM2540C/E160.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)				Comments
1 Outfall 018	Outfall018_20230307_Comp	3/7/2023 /0910	WM	500 mL Poly	1	HNO_3	90	Yes	X										X					
			WM	1 L Glass Amber	2	None	110	No		X														
			WM	1L Poly	1	None	115	No			X													
			WM	500 mL Poly	2	None	120	No				X												
			WM	500 mL Poly	2	None	130	No					X											48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X										48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X								
			WM	1 L Glass Amber	2	None	170	No									X							
			WM	1 L Glass Amber	2	None	180	No										X						
			WM	1L Poly	1	None	185	No							X									
2	Outfall018_20230307_Comp_Extra	3/7/2023 /0910	WM	1 L Glass Amber	2	None	110	No		H														Hold
			~~WM~~	~~500 mL Poly~~	~~2~~	~~None~~	~~120~~	~~No~~				H												Hold
			~~WM~~	~~500 mL Poly~~	~~2~~	~~None~~	~~130~~	~~No~~					H											Hold
			WM	1 L Glass Amber	2	None	170	No									H							Hold
			WM	1 L Glass Amber	2	None	180	No											H					Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
	3-7-2023 / 13:30	H&A	EC	3-7-23 1330
	3-7-23 18:00	EC	EC	3-7-23 18:00

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

2.0/2.0 1.4/1.4 SCII

2019-2020 Rainy Season
Version 4

130128

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel: 714-895-5494 **ECI Project #57013187**	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED													
									R	R	R	R	R	C								
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)		Total Dissolved Metals: Mercury (E245.1)								
3	Outfall018_20230307_Comp_F	3/7/2023 0910	WM	1L Poly	1	None	200	Yes	X													
Outfall 018			WM	borosilicate vials	1	None	320	No					X									Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230307_Comp	3/7/2023 0910	WM	500 mL Poly	1	NaOH	220	No		X												
1			WM	2.5 Gal Cube	1	None	225	No			X											Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No														

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	3-7-2023 13:30	H.A	[signature] EC	3-7-23 13:30
[signature]	3-7-23 18:00	EC	[signature] EC	3-7-23 18:00

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

2019-2020 Rainy Season
Version 4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-209600.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-130128-1
Address: 880 Riverside Parkway, ,	Due Date Requested: 3/17/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall - 018 - Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall018_20230307_Comp (570-130128-1)	3/7/23	09:10 Pacific		Water			X		2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.
Outfall018_20230307_Comp_Extra (570-130128-2)	3/7/23	09:10 Pacific		Water				X	2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		03/08/23 10:07	EU		3.9.23 915	GLS
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.: Seal	Cooler Temperature(s) °C and Other Remarks: 3.1

Ver: 06/08/2021

4/3/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-209600.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-130128-1
Address: 880 Riverside Parkway, ,	Due Date Requested: 3/17/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall - 018 - Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall018_20230307_Comp (570-130128-1)	3/7/23	09:10 Pacific		Water			X		2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.
Outfall018_20230307_Comp_Extra (570-130128-2)	3/7/23	09:10 Pacific		Water				X	2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		03/08/23 10:07	EU		3.9.23 915	GSFM
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: Seal	Cooler Temperature(s) °C and Other Remarks: 3.1

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-130128-2

Login Number: 130128
List Number: 1
Creator: Cruise, Noel

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-130128-2

Login Number: 130128
List Number: 3
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 03/09/23 05:02 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.1c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/12/2023 8:00:50 PM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall - 018 - Comp

JOB NUMBER

570-130128-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Eurofins Calscience

Job Notes

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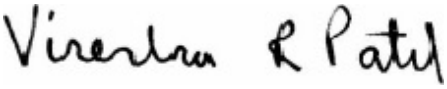
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-3

Qualifiers

Rad

Qualifier	Qualifier Description
F	MS/MSD Recovery and/or RPD exceeds the control limits
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-130128-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-130128-3

Comments
No additional comments.

Receipt
The samples were received on 3/7/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.0º C.

Receipt Exceptions

The reference method requires samples to have a pH of <2. The following samples were received with a pH of 7: <Affected Samples>. The samples were adjusted to the appropriate pH in the laboratory.

RAD
Method 900.0: Gross Alpha Beta prep batch 160-606236:

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 160-606326 and analytical batch 160-606671 were outside control limits for one or more analytes. In addition RER/RPD was also outside of control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 900.0: Gross Alpha Beta prep batch 160-606326:

The detection goal was not met for the following sample(s). The samples and batch QC were prepped at full volume. Matrix interferences are suspected because the method blank achieved the detection goal demonstrating acceptable sample preparation and instrument performance. (570-129852-R-1-F)

Method 900.0: Gross Alpha Beta prep batch 160-606326:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230307_Comp (570-130128-1), (LCS 160-606326/2-A), (LCSB 160-606326/3-A), (MB 160-606326/1-A), (570-129852-R-1-F), (570-129852-R-1-J MS), (570-129852-R-1-L MSBT), (570-129852-R-1-M MSBTD) and (570-129852-R-1-K MSD)

Method 901.1: Gamma Prep Batch 160-604735
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231

Job ID: 570-130128-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Outfall018_20230307_Comp (570-130128-1), (570-129084-R-1-F) and (570-129084-R-1-H DU)

Methods 903.0, 9315: Radium-226 prep batch 160-604353:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230307_Comp (570-130128-1), (LCS 160-604353/2-A), (LCSD 160-604353/3-A) and (MB 160-604353/1-A)

Methods 904.0, 9320: Radium-228 batch 604358
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230307_Comp (570-130128-1), (LCS 160-604358/2-A), (LCSD 160-604358/3-A) and (MB 160-604358/1-A)

Method 905: Strontium-90 batch 604379
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230307_Comp (570-130128-1), (LCS 160-604379/2-A), (MB 160-604379/1-A), (570-129852-R-1-D), (570-129852-L-1-E MS) and (570-129852-L-1-F MSD)

Method 906.0: Tritium 605783
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall018_20230307_Comp (570-130128-1), (LCS 160-605783/2-A), (MB 160-605783/1-A), (160-49448-A-1-C), (160-49448-A-1-D MS) and (570-130128-R-1-B DU)

Method A-01-R: Isotopic Uranium Batch 605724
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.Outfall018_20230307_Comp (570-130128-1), (LCS 160-605724/2-A), (MB 160-605724/1-A), (570-129852-R-1-E), (570-129852-L-1-G MS) and (570-129852-L-1-H MSD)

Method ExtChrom: Uranium Prep Batch 160-605724:
The following sample was prepared at a reduced aliquot due to sediment and discoloration: Outfall018_20230307_Comp (570-130128-1).

Method PrecSep_0: Radium-228 Prep Batch 160-604358

Job ID: 570-130128-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

Insufficient sample volume was available to perform a sample duplicate for the following samples: Outfall018_20230307_Comp (570-130128-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-21: Radium-226 Prep Batch 160-604353

Insufficient sample volume was available to perform a sample duplicate for the following samples: Outfall018_20230307_Comp (570-130128-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-7:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-130128-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Client Sample ID: Outfall018_20230307_Comp
Lab Sample ID: 570-130128-1

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-130128-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: Outfall018_20230307_Comp
Lab Sample ID: 570-130128-1
Date Collected: 03/07/23 09:10
Matrix: Water
Date Received: 03/07/23 18:00

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	1.30	U F	1.53	1.54	3.00	2.51	pCi/L	04/06/23 10:28	04/11/23 06:09	1
Gross Beta	**1.80**		0.676	0.699	4.00	0.899	pCi/L	04/06/23 10:28	04/11/23 06:09	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-3

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: Outfall018_20230307_Comp
Date Collected: 03/07/23 09:10
Date Received: 03/07/23 18:00

Lab Sample ID: 570-130128-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	4.69	U	11.3	11.3	20.0	14.5	pCi/L	03/22/23 16:26	03/30/23 08:06	1
Potassium-40	-13.0	U	166	166		237	pCi/L	03/22/23 16:26	03/30/23 08:06	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-3

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: Outfall018_20230307_Comp
Date Collected: 03/07/23 09:10
Date Received: 03/07/23 18:00

Lab Sample ID: 570-130128-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0754	U	0.100	0.100	1.00	0.168	pCi/L	03/20/23 11:13	04/11/23 06:44	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.6*		*30 - 110*	*03/20/23 11:13*	*04/11/23 06:44*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-3

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: Outfall018_20230307_Comp
Date Collected: 03/07/23 09:10
Date Received: 03/07/23 18:00

Lab Sample ID: 570-130128-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.434	U	0.506	0.507	1.00	0.832	pCi/L	03/20/23 11:35	04/05/23 11:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.6*		*30 - 110*	*03/20/23 11:35*	*04/05/23 11:37*	*1*
Y Carrier	*80.7*		*30 - 110*	*03/20/23 11:35*	*04/05/23 11:37*	*1*

Client Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-130128-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: Outfall018_20230307_Comp
Date Collected: 03/07/23 09:10
Date Received: 03/07/23 18:00

Lab Sample ID: 570-130128-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.000	U	0.465	0.465	3.00	0.848	pCi/L	03/20/23 13:22	03/29/23 16:09	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*68.8*		*30 - 110*	*03/20/23 13:22*	*03/29/23 16:09*	*1*
Y Carrier	*72.5*		*30 - 110*	*03/20/23 13:22*	*03/29/23 16:09*	*1*

Client Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-130128-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: Outfall018_20230307_Comp
Lab Sample ID: 570-130128-1
Date Collected: 03/07/23 09:10
Matrix: Water
Date Received: 03/07/23 18:00

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	86.5	U	195	196	500	341	pCi/L	03/31/23 16:36	04/05/23 09:47	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-3

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: Outfall018_20230307_Comp
Date Collected: 03/07/23 09:10
Date Received: 03/07/23 18:00

Lab Sample ID: 570-130128-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	1.01		0.377	0.380	1.00	0.191	pCi/L	03/30/23 15:31	04/04/23 20:42	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*91.7*		*30 - 110*	*03/30/23 15:31*	*04/04/23 20:42*	*1*

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-3

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-130128-1	Outfall018_20230307_Comp	78.6
LCS 160-604353/2-A	Lab Control Sample	90.5
LCSD 160-604353/3-A	Lab Control Sample Dup	93.6
MB 160-604353/1-A	Method Blank	90.5

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-130128-1	Outfall018_20230307_Comp	78.6	80.7
LCS 160-604358/2-A	Lab Control Sample	90.5	90.8
LCSD 160-604358/3-A	Lab Control Sample Dup	93.6	85.2
MB 160-604358/1-A	Method Blank	90.5	86.4

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-130128-1	Outfall018_20230307_Comp	68.8	72.5
LCS 160-604379/2-A	Lab Control Sample	85.6	76.6
MB 160-604379/1-A	Method Blank	79.3	70.3

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-130128-1	Outfall018_20230307_Comp	91.7
LCS 160-605724/2-A	Lab Control Sample	92.1
MB 160-605724/1-A	Method Blank	92.8

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-606326/1-A
Matrix: Water
Analysis Batch: 606671

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606326

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.4133	U	0.657	0.658	3.00	1.12	pCi/L	04/06/23 10:28	04/10/23 20:47	1
Gross Beta	0.02677	U	0.496	0.496	4.00	0.874	pCi/L	04/06/23 10:28	04/10/23 20:47	1

Lab Sample ID: LCS 160-606326/2-A
Matrix: Water
Analysis Batch: 606895

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606326

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	51.96		7.62	3.00	2.05	pCi/L	103	75 - 125

Lab Sample ID: LCSB 160-606326/3-A
Matrix: Water
Analysis Batch: 606671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606326

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.4	74.51		7.98	4.00	0.927	pCi/L	102	75 - 125

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-604735/1-A
Matrix: Water
Analysis Batch: 605378

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604735

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	5.575	U	11.5	11.5	20.0	14.5	pCi/L	03/22/23 16:26	03/29/23 21:25	1
Potassium-40	-139.9	U	180	180		285	pCi/L	03/22/23 16:26	03/29/23 21:25	1

Lab Sample ID: LCS 160-604735/2-A
Matrix: Water
Analysis Batch: 605376

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604735

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	135500		16100		443	pCi/L	100	75 - 125
Cesium-137	40800	42170		5030	20.0	105	pCi/L	103	75 - 125
Cobalt-60	17800	18660		2230		54.8	pCi/L	105	75 - 125

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-604353/1-A
Matrix: Water
Analysis Batch: 606895

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604353

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.03495	U	0.0804	0.0804	1.00	0.172	pCi/L	03/20/23 11:13	04/11/23 06:30	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.5*		*30 - 110*	*03/20/23 11:13*	*04/11/23 06:30*	*1*

Lab Sample ID: LCS 160-604353/2-A
Matrix: Water
Analysis Batch: 606896

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604353

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	11.56		1.21	1.00	0.118	pCi/L	102	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*90.5*		*30 - 110*

Lab Sample ID: LCSD 160-604353/3-A
Matrix: Water
Analysis Batch: 606896

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 604353

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	11.64		1.22	1.00	0.130	pCi/L	103	75 - 125	0.03	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*93.6*		*30 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-604358/1-A
Matrix: Water
Analysis Batch: 606261

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604358

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.09792	U	0.271	0.272	1.00	0.484	pCi/L	03/20/23 11:35	04/05/23 11:42	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.5*		*30 - 110*	*03/20/23 11:35*	*04/05/23 11:42*	*1*
Y Carrier	*86.4*		*30 - 110*	*03/20/23 11:35*	*04/05/23 11:42*	*1*

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-604358/2-A
Matrix: Water
Analysis Batch: 606261

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604358

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.06	8.920		1.20	1.00	0.395	pCi/L	111	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*90.5*		*30 - 110*
Y Carrier	*90.8*		*30 - 110*

Lab Sample ID: LCSD 160-604358/3-A
Matrix: Water
Analysis Batch: 606261

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 604358

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.06	8.860		1.20	1.00	0.421	pCi/L	110	75 - 125	0.03	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*93.6*		*30 - 110*
Y Carrier	*85.2*		*30 - 110*

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-604379/1-A
Matrix: Water
Analysis Batch: 605413

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604379

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.1030	U	0.268	0.268	3.00	0.492	pCi/L	03/20/23 13:22	03/29/23 15:59	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*79.3*		*30 - 110*	*03/20/23 13:22*	*03/29/23 15:59*	*1*
Y Carrier	*70.3*		*30 - 110*	*03/20/23 13:22*	*03/29/23 15:59*	*1*

Lab Sample ID: LCS 160-604379/2-A
Matrix: Water
Analysis Batch: 605413

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604379

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.35	7.405		0.842	3.00	0.323	pCi/L	101	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*85.6*		*30 - 110*
Y Carrier	*76.6*		*30 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-605783/1-A
Matrix: Water
Analysis Batch: 606300

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605783

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-38.29	U	176	176	500	335	pCi/L	03/31/23 16:36	04/05/23 09:13	1

Lab Sample ID: LCS 160-605783/2-A
Matrix: Water
Analysis Batch: 606300

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605783

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2090	2124		427	500	344	pCi/L	101	75 - 125		

Lab Sample ID: 570-130128-1 DU
Matrix: Water
Analysis Batch: 606300

Client Sample ID: Outfall018_20230307_Comp
Prep Type: Total/NA
Prep Batch: 605783

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Tritium	86.5	U		-38.74	U	182	500	350	pCi/L			0.33	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-605724/1-A
Matrix: Water
Analysis Batch: 606117

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605724

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.03149	U	0.08996	0.09003	1.00	0.148	pCi/L	03/30/23 15:31	04/04/23 20:40	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*92.8*		*30 - 110*	*03/30/23 15:31*	*04/04/23 20:40*	*1*

Lab Sample ID: LCS 160-605724/2-A
Matrix: Water
Analysis Batch: 606357

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605724

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	13.25		1.55	1.00	0.113	pCi/L	104	75 - 125		
Uranium-238			13.0	13.61		1.58	1.00	0.123	pCi/L	105	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*92.1*		*30 - 110*

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-3

Rad

Prep Batch: 604353

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	PrecSep-21	
MB 160-604353/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-604353/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-604353/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 604358

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	PrecSep_0	
MB 160-604358/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-604358/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-604358/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 604379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	PrecSep-7	
MB 160-604379/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-604379/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	

Prep Batch: 604735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	Fill_Geo-0	
MB 160-604735/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-604735/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 605724

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	ExtChrom	
MB 160-605724/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-605724/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 605783

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	LSC_Dist_Susp	
MB 160-605783/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-605783/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
570-130128-1 DU	Outfall018_20230307_Comp	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 606326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130128-1	Outfall018_20230307_Comp	Total/NA	Water	Evaporation	
MB 160-606326/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-606326/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-606326/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-3

Client Sample ID: Outfall018_20230307_Comp

Date Collected: 03/07/23 09:10
Date Received: 03/07/23 18:00

Lab Sample ID: 570-130128-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Evaporation			200.01 mL	1.0 g	606326	04/06/23 10:28	MST	EET SL
Total/NA	Analysis	900.0		1			606895	04/11/23 06:09	SCB	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	604735	03/22/23 16:26	SEH	EET SL
Total/NA	Analysis	901.1		1			605597	03/30/23 08:06	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	PrecSep-21			749.80 mL	1.0 g	604353	03/20/23 11:13	DJP	EET SL
Total/NA	Analysis	903.0		1			606893	04/11/23 06:44	SCB	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			749.80 mL	1.0 g	604358	03/20/23 11:35	DJP	EET SL
Total/NA	Analysis	904.0		1			606157	04/05/23 11:37	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep-7			497.63 mL	1.0 g	604379	03/20/23 13:22	DJP	EET SL
Total/NA	Analysis	905		1			605414	03/29/23 16:09	FLC	EET SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	LSC_Dist_Susp			102.08 mL	1.0 g	605783	03/31/23 16:36	SEH	EET SL
Total/NA	Analysis	906.0		1			606300	04/05/23 09:47	REV	EET SL
	Instrument ID: LSCTEAL									
Total/NA	Prep	ExtChrom			301.0 mL	1.0 mL	605724	03/30/23 15:31	CMM	EET SL
Total/NA	Analysis	A-01-R		1			606122	04/04/23 20:42	EJS	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-3

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	06-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-23
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-3

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy
EPA = US Environmental Protection Agency
None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 - Comp

Job ID: 570-130128-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-130128-1	Outfall018_20230307_Comp	Water	03/07/23 09:10	03/07/23 18:00

130128

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-130128 Chain of Custody

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel: 714-895-5494 **ECI Project #57013187**	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

									ANALYSIS REQUIRED															
									R	R	R	R	R	R	R	R	R	R	R	C				
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl-, SO_4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	Turbidity, TDS (SM2540C/E160.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)				Comments
1 Outfall 018	Outfall018_20230307_Comp	3/7/2023 /0910	WM	500 mL Poly	1	HNO_3	90	Yes	X										X					
			WM	1 L Glass Amber	2	None	110	No		X														
			WM	1L Poly	1	None	115	No			X													
			WM	500 mL Poly	2	None	120	No				X												
			WM	500 mL Poly	2	None	130	No					X											48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X										48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X								
			WM	1 L Glass Amber	2	None	170	No									X							
			WM	1 L Glass Amber	2	None	180	No										X						
			WM	1L Poly	1	None	185	No							X									
2	Outfall018_20230307_Comp_Extra	3/7/2023 /0910	WM	1 L Glass Amber	2	None	110	No		H														Hold
			~~WM~~	~~500 mL Poly~~	~~2~~	~~None~~	~~120~~	~~No~~				H												Hold
			~~WM~~	~~500 mL Poly~~	~~2~~	~~None~~	~~130~~	~~No~~					H											Hold
			WM	1 L Glass Amber	2	None	170	No									H							Hold
			WM	1 L Glass Amber	2	None	180	No											H					Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
	3-7-2023 / 13:30	H&A	EC	3-7-23 1330
	3-7-23 18:00	EC	EC	3-7-23 18:00

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

2.0/2.0 1.4/1.4 SCII

2019-2020 Rainy Season
Version 4

130128

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel: 714-895-5494 **ECI Project #57013187**	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED														
									R	R	R	R	R	C									
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)		Total Dissolved Metals: Mercury (E245.1)								
3 Outfall 018	Outfall018_20230307_Comp_F	3/7/2023 0910	WM	1L Poly	1	None	200	Yes	X														
			WM	borosilicate vials	1	None	320	No					X										Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
1	Outfall018_20230307_Comp	3/7/2023 0910	WM	500 mL Poly	1	NaOH	220	No		X													
			WM	2.5 Gal Cube	1	None	225	No			X												Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No															

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	3-7-2023 13:30	H.A	[signature]	EC 3-7-23 13:30
[signature]	3-7-23 18:00	EC	[signature]	EC 3-7-23 18:00

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-209583.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-130128-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 3/17/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall - 018 - Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	906.0/LSC_Dist_Susp Tritium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230307_Comp (570-130128-1)	3/7/23	09:10 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	03/08/23 9:28	EC	FED EX		
Relinquished by: FED EX	Date/Time:	Company	Received by: [signature]	Date/Time: MAR 09 2023 1010	Company GTASL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-130128-3

Login Number: 130128
List Number: 1
Creator: Cruise, Noel

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-130128-3

Login Number: 130128
List Number: 2
Creator: Worthington, Sierra M

List Source: Eurofins St. Louis
List Creation: 03/09/23 03:21 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	False	Refer to Job Narrative for details.
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall - 018 Grab

JOB NUMBER

570-130920-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Eurofins Calscience

Job Notes

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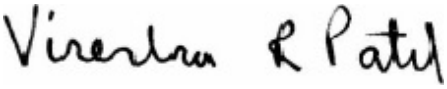
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-130920-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Grat

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc. Job ID: 570-130920-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Grab

Job ID: 570-130920-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-130920-1

Comments
No additional comments.

Receipt
The samples were received on 3/14/2023 6:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.8º C.

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-311826. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method SM 2540F: Insufficient sample volume was available to perform sample duplicate (DUP) associated with analytical batch 570-311816.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-130920-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Grab

Client Sample ID: Outfall018_20230313_Grab
Lab Sample ID: 570-130920-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	420		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA

Client Sample ID: TB-20230313
Lab Sample ID: 570-130920-2

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: Outfall018_20230313_Grab **Lab Sample ID: 570-130920-1**
Date Collected: 03/13/23 13:10 **Matrix: Water**
Date Received: 03/14/23 18:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/15/23 16:41	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/15/23 16:41	1
Trichloroethene	ND		0.50	0.17	ug/L			03/15/23 16:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*60 - 140*		*03/15/23 16:41*	*1*
Toluene-d8 (Surr)	*100*		*60 - 140*		*03/15/23 16:41*	*1*
Dibromofluoromethane (Surr)	*85*		*60 - 140*		*03/15/23 16:41*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*60 - 140*		*03/15/23 16:41*	*1*

Client Sample ID: TB-20230313 **Lab Sample ID: 570-130920-2**
Date Collected: 03/13/23 13:10 **Matrix: Water**
Date Received: 03/14/23 18:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/15/23 15:33	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/15/23 15:33	1
Trichloroethene	ND		0.50	0.17	ug/L			03/15/23 15:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*60 - 140*		*03/15/23 15:33*	*1*
Toluene-d8 (Surr)	*95*		*60 - 140*		*03/15/23 15:33*	*1*
Dibromofluoromethane (Surr)	*88*		*60 - 140*		*03/15/23 15:33*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*60 - 140*		*03/15/23 15:33*	*1*

General Chemistry

Client Sample ID: Outfall018_20230313_Grab
Lab Sample ID: 570-130920-1
Date Collected: 03/13/23 13:10
Matrix: Water
Date Received: 03/14/23 18:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	ND		1.0	0.51	mg/L		03/16/23 10:47	03/16/23 16:09	1
Specific Conductance (SM 2510B)	**420**		1.0	1.0	umhos/cm			03/20/23 20:27	1
Settleable Solids (SM 2540F)	ND		0.10	0.10	mL/L			03/15/23 09:53	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-130920-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Grab

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	TOL	DBFM	DCA
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-130920-1	Outfall018_20230313_Grab	96	100	85	92
570-130920-2	TB-20230313	95	95	88	88
LCS 570-311826/1003	Lab Control Sample	96	100	92	95
LCSD 570-311826/4	Lab Control Sample Dup	97	98	96	92
MB 570-311826/6	Method Blank	95	97	88	86

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-311826/6
Matrix: Water
Analysis Batch: 311826

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/15/23 15:10	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/15/23 15:10	1
Trichloroethene	ND		0.50	0.17	ug/L			03/15/23 15:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*60 - 140*		*03/15/23 15:10*	*1*
Toluene-d8 (Surr)	*97*		*60 - 140*		*03/15/23 15:10*	*1*
Dibromofluoromethane (Surr)	*88*		*60 - 140*		*03/15/23 15:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*60 - 140*		*03/15/23 15:10*	*1*

Lab Sample ID: LCS 570-311826/1003
Matrix: Water
Analysis Batch: 311826

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1-Dichloroethene			10.0	9.66		ug/L		97	50 - 150		
1,2-Dichloroethane			10.0	9.63		ug/L		96	70 - 130		
Trichloroethene			10.0	9.85		ug/L		98	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*60 - 140*
Toluene-d8 (Surr)	*100*		*60 - 140*
Dibromofluoromethane (Surr)	*92*		*60 - 140*
1,2-Dichloroethane-d4 (Surr)	*95*		*60 - 140*

Lab Sample ID: LCSD 570-311826/4
Matrix: Water
Analysis Batch: 311826

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene			10.0	10.8		ug/L		108	50 - 150	11	32
1,2-Dichloroethane			10.0	9.18		ug/L		92	70 - 130	5	49
Trichloroethene			10.0	10.4		ug/L		104	65 - 135	5	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*60 - 140*
Toluene-d8 (Surr)	*98*		*60 - 140*
Dibromofluoromethane (Surr)	*96*		*60 - 140*
1,2-Dichloroethane-d4 (Surr)	*92*		*60 - 140*

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-312148/1-A
Matrix: Water
Analysis Batch: 312265

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 312148

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		1.0	0.51	mg/L		03/16/23 10:47	03/16/23 16:09	1

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: LCS 570-312148/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312265 — **Prep Batch: 312148**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM (Oil & Grease)	40.0	37.1		mg/L		93	78 - 114

Lab Sample ID: LCSD 570-312148/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312265 — **Prep Batch: 312148**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM (Oil & Grease)	40.0	37.6		mg/L		94	78 - 114	1	18

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-313431/7 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 313431

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/20/23 19:15	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Grat

Job ID: 570-130920-1

GC/MS VOA

Analysis Batch: 311826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130920-1	Outfall018_20230313_Grab	Total/NA	Water	624.1	
570-130920-2	TB-20230313	Total/NA	Water	624.1	
MB 570-311826/6	Method Blank	Total/NA	Water	624.1	
LCS 570-311826/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-311826/4	Lab Control Sample Dup	Total/NA	Water	624.1	

General Chemistry

Analysis Batch: 311816

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130920-1	Outfall018_20230313_Grab	Total/NA	Water	SM 2540F	

Prep Batch: 312148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130920-1	Outfall018_20230313_Grab	Total/NA	Water	1664A	
MB 570-312148/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-312148/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-312148/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 312265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130920-1	Outfall018_20230313_Grab	Total/NA	Water	1664A	312148
MB 570-312148/1-A	Method Blank	Total/NA	Water	1664A	312148
LCS 570-312148/2-A	Lab Control Sample	Total/NA	Water	1664A	312148
LCSD 570-312148/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	312148

Analysis Batch: 313431

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-130920-1	Outfall018_20230313_Grab	Total/NA	Water	SM 2510B	
MB 570-313431/7	Method Blank	Total/NA	Water	SM 2510B	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-130920-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Grab

Client Sample ID: Outfall018_20230313_Grab
Lab Sample ID: 570-130920-1
Date Collected: 03/13/23 13:10
Matrix: Water
Date Received: 03/14/23 18:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	311826	03/15/23 16:41	N1A	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Prep	1664A			997 mL	1000 mL	312148	03/16/23 10:47	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			312265	03/16/23 16:09	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									
Total/NA	Analysis	SM 2510B		1			313431	03/20/23 20:27	BDH9	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	311816	03/15/23 09:53	GG0B	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB-20230313
Lab Sample ID: 570-130920-2
Date Collected: 03/13/23 13:10
Matrix: Water
Date Received: 03/14/23 18:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	311826	03/15/23 15:33	N1A	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-130920-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Grat

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-130920-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Grab

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4

Protocol References:

1664A = EPA-821-98-002

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Grab

Job ID: 570-130920-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-130920-1	Outfall018_20230313_Grab	Water	03/13/23 13:10	03/14/23 18:15
570-130920-2	TB-20230313	Water	03/13/23 13:10	03/14/23 18:15

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-130920 Chain of Custody

Loc: 570
130920

EDBPJ6UX

Client Name/Address:	Project:	ANALYSIS REQUIRED	Field Readings	Meter serial #
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Grab	R R R R	Field Readings: (Include units) Time of Readings: 1310	
Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 **ECI Project #57013187**			DO 28.64 mg/L pH 7.26 pH unit Temp 57.2 °C/F	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)			
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)		Field readings QC Checked by: MD Date/Time: 3-13-2023/1310	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Oil & Grease (E1664A-HEM)	VOCs - only 1,1-DCE, 1,2-DCA, TCE (E624)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Comments
Outfall 018	Outfall018_20230313_Grab	3/13/2023 1310	WM	1 L Glass Amber	2	HCl	15	No	X				
			WM	40 mL VOA	3	HCl	30	No		X			
			WM	1L Poly	1	None	70	No			X		
			WM	500 mL Poly	1	None	75	No				X	
Trip Blanks	TB-20230313	3/13/2023 1310	WQ	40 mL VOA	3	HCl	30	No		X			

Legend: R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
MD	3-14-2023/1315	H:A		3/14/23 1315 EC
	3/14/23 1815	EC		3/14/23 18:15 EC

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

1.9/1.8 SC12

2019-2020 Rainy Season
Version 4

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-130920-1

Login Number: 130920
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/7/2023 3:23:02 PM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall - 018 Comp

JOB NUMBER

570-131459-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization

Virendra R Patil

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4/7/2023 3:23:02 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Qualifiers

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131459-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131459-1

Receipt
The samples were received on 3/16/2023 5:45 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.2°C

GC/MS Semi VOA
Method 625.1_SIM: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-313228. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Method 625.1 Sim

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Pesticides
Method 608.3_Pest_LL: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-313866. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. 608LL

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
Method 300_ORGFMS: The following sample was diluted due to the nature of the sample matrix: Outfall018_20230316_Comp (570-131459-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Client Sample ID: Outfall018_20230316_Comp
Lab Sample ID: 570-131459-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.3		2.0	0.72	mg/L	2		300.0	Total/NA
Nitrate as N	0.20		0.20	0.039	mg/L	2		300.0	Total/NA
Sulfate	83		2.0	0.47	mg/L	2		300.0	Total/NA
Nitrate Nitrite as N	0.20		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Copper	2.0		2.0	0.32	ug/L	1		200.8	Total Recoverable
Ammonia	0.041	J,DX	0.075	0.032	mg/L	1		350.1	Total/NA
Turbidity	0.35		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Dissolved Solids	260		10	8.7	mg/L	1		SM 2540C	Total/NA
Biochemical Oxygen Demand	3.0		2.0	1.0	mg/L	1		SM 5210B	Total/NA

Client Sample ID: Outfall018_20230316_Comp_F
Lab Sample ID: 570-131459-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	1.8	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Selenium	0.93	J,DX BU	2.0	0.52	ug/L	1		200.8	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: Outfall018_20230316_Comp
Lab Sample ID: 570-131459-1
Date Collected: 03/16/23 07:45
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		0.94	0.13	ug/L		03/22/23 05:11	04/03/23 18:36	1
2,4-Dinitrotoluene	ND		0.19	0.11	ug/L		03/22/23 05:11	04/03/23 18:36	1
Bis(2-ethylhexyl) phthalate	ND		4.7	3.4	ug/L		03/22/23 05:11	04/03/23 18:36	1
N-Nitrosodimethylamine	ND		0.19	0.18	ug/L		03/22/23 05:11	04/03/23 18:36	1
Pentachlorophenol	ND		0.94	0.80	ug/L		03/22/23 05:11	04/03/23 18:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*59*		*31 - 120*	*03/22/23 05:11*	*04/03/23 18:36*	*1*
Phenol-d6 (Surr)	*24*		*10 - 120*	*03/22/23 05:11*	*04/03/23 18:36*	*1*
p-Terphenyl-d14 (Surr)	*76*		*45 - 120*	*03/22/23 05:11*	*04/03/23 18:36*	*1*
2,4,6-Tribromophenol	*42*		*28 - 127*	*03/22/23 05:11*	*04/03/23 18:36*	*1*
2-Fluorophenol	*31*		*17 - 120*	*03/22/23 05:11*	*04/03/23 18:36*	*1*
Nitrobenzene-d5	*31*		*27 - 120*	*03/22/23 05:11*	*04/03/23 18:36*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 608.3 - Organochlorine Pesticides in Water

Client Sample ID: Outfall018_20230316_Comp
Lab Sample ID: 570-131459-1
Date Collected: 03/16/23 07:45
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		03/22/23 15:44	03/24/23 04:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*49*		*20 - 139*	*03/22/23 15:44*	*03/24/23 04:12*	*1*
DCB Decachlorobiphenyl (Surr)	*30*		*20 - 154*	*03/22/23 15:44*	*03/24/23 04:12*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: Outfall018_20230316_Comp
Lab Sample ID: 570-131459-1
Date Collected: 03/16/23 07:45
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8.3**		2.0	0.72	mg/L			03/17/23 04:27	2
Nitrite as N	ND		0.20	0.086	mg/L			03/17/23 04:27	2
Nitrate as N	**0.20**		0.20	0.039	mg/L			03/17/23 04:27	2
Sulfate	**83**		2.0	0.47	mg/L			03/17/23 04:27	2

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: Outfall018_20230316_Comp
Lab Sample ID: 570-131459-1
Date Collected: 03/16/23 07:45
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/18/23 00:39	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: Outfall018_20230316_Comp
Lab Sample ID: 570-131459-1
Date Collected: 03/16/23 07:45
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	0.20		0.10	0.020	mg/L			03/24/23 10:42	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: Outfall018_20230316_Comp
Lab Sample ID: 570-131459-1
Date Collected: 03/16/23 07:45
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		03/20/23 07:23	03/20/23 10:41	1
Copper	**2.0**		2.0	0.32	ug/L		03/20/23 07:23	03/20/23 10:41	1
Lead	ND		1.0	0.12	ug/L		03/20/23 07:23	03/20/23 10:41	1
Selenium	ND		2.0	0.52	ug/L		03/20/23 07:23	03/20/23 10:41	1
Zinc	ND		20	2.8	ug/L		03/20/23 07:23	03/20/23 10:41	1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: Outfall018_20230316_Comp_F
Lab Sample ID: 570-131459-2
Date Collected: 03/16/23 07:45
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			03/17/23 11:31	1
Copper	**1.8**	**J,DX BU**	2.0	0.32	ug/L			03/17/23 11:31	1
Lead	ND	BU	1.0	0.12	ug/L			03/17/23 11:31	1
Selenium	**0.93**	**J,DX BU**	2.0	0.52	ug/L			03/17/23 11:31	1
Zinc	ND	BU	20	2.8	ug/L			03/17/23 11:31	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: Outfall018_20230316_Comp
Lab Sample ID: 570-131459-1
Date Collected: 03/16/23 07:45
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/20/23 23:29	03/21/23 16:01	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: Outfall018_20230316_Comp_F
Lab Sample ID: 570-131459-2
Date Collected: 03/16/23 07:45
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	BU	0.20	0.12	ug/L		03/16/23 21:34	03/20/23 14:18	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

General Chemistry

Client Sample ID: Outfall018_20230316_Comp
Date Collected: 03/16/23 07:45
Date Received: 03/16/23 17:45

Lab Sample ID: 570-131459-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	**0.041**	**J,DX**	0.075	0.032	mg/L		03/29/23 12:02	03/29/23 13:40	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			03/27/23 14:43	1
Turbidity (SM 2130B)	**0.35**		0.05	0.05	NTU			03/17/23 13:46	1
Total Dissolved Solids (SM 2540C)	**260**		10	8.7	mg/L			03/20/23 21:08	1
Total Suspended Solids (SM 2540D)	ND		1.0	0.83	mg/L			03/22/23 14:52	1
Biochemical Oxygen Demand (SM 5210B)	**3.0**		2.0	1.0	mg/L		03/17/23 12:09	03/17/23 12:45	1
MBAS (SM 5540C)	ND		0.20	0.050	mg/L		03/16/23 19:30	03/16/23 20:57	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Job ID: 570-131459-1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	PHL6	TPHd14	TBP	2FP	NBZ
Lab Sample ID	Client Sample ID	(31-120)	(10-120)	(45-120)	(28-127)	(17-120)	(27-120)
570-131459-1	Outfall018_20230316_Comp	59	24	76	42	31	31
LCS 570-313228/2-A	Lab Control Sample	54	26	91	56	35	53
LCSD 570-313228/3-A	Lab Control Sample Dup	69	30	97	68	42	55
MB 570-313228/1-A	Method Blank	49	22	76	62	33	56

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX2	DCB1
Lab Sample ID	Client Sample ID	(20-139)	(20-154)
570-131459-1	Outfall018_20230316_Comp	49	30
MB 570-313866/1-A	Method Blank	67	77

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl (Surr)

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX1	DCB1
Lab Sample ID	Client Sample ID	(20-139)	(20-154)
LCS 570-313866/2-A	Lab Control Sample	58	72
LCSD 570-313866/3-A	Lab Control Sample Dup	67	79

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-313228/1-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 313228

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		03/21/23 06:13	03/23/23 12:27	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		03/21/23 06:13	03/23/23 12:27	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		03/21/23 06:13	03/23/23 12:27	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		03/21/23 06:13	03/23/23 12:27	1
Pentachlorophenol	ND		1.0	0.84	ug/L		03/21/23 06:13	03/23/23 12:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*49*		*31 - 120*	*03/21/23 06:13*	*03/23/23 12:27*	*1*
Phenol-d6 (Surr)	*22*		*10 - 120*	*03/21/23 06:13*	*03/23/23 12:27*	*1*
p-Terphenyl-d14 (Surr)	*76*		*45 - 120*	*03/21/23 06:13*	*03/23/23 12:27*	*1*
2,4,6-Tribromophenol	*62*		*28 - 127*	*03/21/23 06:13*	*03/23/23 12:27*	*1*
2-Fluorophenol	*33*		*17 - 120*	*03/21/23 06:13*	*03/23/23 12:27*	*1*
Nitrobenzene-d5	*56*		*27 - 120*	*03/21/23 06:13*	*03/23/23 12:27*	*1*

Lab Sample ID: LCS 570-313228/2-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 313228

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4,6-Trichlorophenol	20.0	10.4		ug/L		52	52 - 129
2,4-Dinitrotoluene	20.0	14.2		ug/L		71	48 - 127
Bis(2-ethylhexyl) phthalate	20.0	20.0		ug/L		100	29 - 137
N-Nitrosodimethylamine	20.0	7.21		ug/L		36	20 - 120
Pentachlorophenol	20.0	8.07		ug/L		40	38 - 152

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*54*		*31 - 120*
Phenol-d6 (Surr)	*26*		*10 - 120*
p-Terphenyl-d14 (Surr)	*91*		*45 - 120*
2,4,6-Tribromophenol	*56*		*28 - 127*
2-Fluorophenol	*35*		*17 - 120*
Nitrobenzene-d5	*53*		*27 - 120*

Lab Sample ID: LCSD 570-313228/3-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 313228

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4,6-Trichlorophenol	20.0	12.9		ug/L		64	52 - 129	21	35
2,4-Dinitrotoluene	20.0	13.4		ug/L		67	48 - 127	6	25
Bis(2-ethylhexyl) phthalate	20.0	22.2		ug/L		111	29 - 137	10	50
N-Nitrosodimethylamine	20.0	8.51		ug/L		43	20 - 120	17	21
Pentachlorophenol	20.0	9.04		ug/L		45	38 - 152	11	52

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*69*		*31 - 120*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-313228/3-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 313228

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Phenol-d6 (Surr)	*30*		*10 - 120*
p-Terphenyl-d14 (Surr)	*97*		*45 - 120*
2,4,6-Tribromophenol	*68*		*28 - 127*
2-Fluorophenol	*42*		*17 - 120*
Nitrobenzene-d5	*55*		*27 - 120*

Method: 608.3 - Organochlorine Pesticides in Water

Lab Sample ID: MB 570-313866/1-A
Matrix: Water
Analysis Batch: 313951

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 313866

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		03/22/23 15:44	03/23/23 23:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*67*		*20 - 139*	*03/22/23 15:44*	*03/23/23 23:56*	*1*
DCB Decachlorobiphenyl (Surr)	*77*		*20 - 154*	*03/22/23 15:44*	*03/23/23 23:56*	*1*

Lab Sample ID: LCS 570-313866/2-A
Matrix: Water
Analysis Batch: 313951

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 313866

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
alpha-BHC			0.0333	0.0218		ug/L		65	37 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*58*		*20 - 139*
DCB Decachlorobiphenyl (Surr)	*72*		*20 - 154*

Lab Sample ID: LCSD 570-313866/3-A
Matrix: Water
Analysis Batch: 313951

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 313866

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
alpha-BHC			0.0333	0.0249		ug/L		75	37 - 140	13	36

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*67*		*20 - 139*
DCB Decachlorobiphenyl (Surr)	*79*		*20 - 154*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-312052/5
Matrix: Water
Analysis Batch: 312052

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			03/16/23 07:14	1
Sulfate	ND		1.0	0.24	mg/L			03/16/23 07:14	1

Lab Sample ID: LCS 570-312052/6
Matrix: Water
Analysis Batch: 312052

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	50.2		mg/L		100	90 - 110
Sulfate	50.0	49.1		mg/L		98	90 - 110

Lab Sample ID: LCSD 570-312052/7
Matrix: Water
Analysis Batch: 312052

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	50.2		mg/L		100	90 - 110	0	15
Sulfate	50.0	49.1		mg/L		98	90 - 110	0	15

Lab Sample ID: MB 570-312053/5
Matrix: Water
Analysis Batch: 312053

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			03/16/23 07:14	1
Nitrate as N	ND		0.10	0.020	mg/L			03/16/23 07:14	1

Lab Sample ID: LCS 570-312053/6
Matrix: Water
Analysis Batch: 312053

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.44		mg/L		98	90 - 110
Nitrate as N	5.00	5.02		mg/L		100	90 - 110

Lab Sample ID: LCSD 570-312053/7
Matrix: Water
Analysis Batch: 312053

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.45		mg/L		98	90 - 110	1	15
Nitrate as N	5.00	5.02		mg/L		100	90 - 110	0	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-312587/7
Matrix: Water
Analysis Batch: 312587

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/17/23 18:02	1

Lab Sample ID: LCS 570-312587/8
Matrix: Water
Analysis Batch: 312587

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	24.9		ug/L		100	85 - 115

Lab Sample ID: LCSD 570-312587/9
Matrix: Water
Analysis Batch: 312587

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	24.9		ug/L		99	85 - 115	0	15

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-312912/1-A
Matrix: Water
Analysis Batch: 312977

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 312912

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		03/20/23 07:23	03/20/23 10:55	1
Copper	ND		2.0	0.32	ug/L		03/20/23 07:23	03/20/23 10:55	1
Iron	ND		20	3.7	ug/L		03/20/23 07:23	03/20/23 10:55	1
Lead	ND		1.0	0.12	ug/L		03/20/23 07:23	03/20/23 10:55	1
Manganese	ND		1.0	0.41	ug/L		03/20/23 07:23	03/20/23 10:55	1
Selenium	ND		2.0	0.52	ug/L		03/20/23 07:23	03/20/23 10:55	1
Zinc	ND		20	2.8	ug/L		03/20/23 07:23	03/20/23 10:55	1

Lab Sample ID: LCS 570-312912/2-A
Matrix: Water
Analysis Batch: 312977

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 312912

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	76.5		ug/L		96	85 - 115
Copper	80.0	73.2		ug/L		91	85 - 115
Iron	800	776		ug/L		97	85 - 115
Lead	80.0	70.6		ug/L		88	85 - 115
Manganese	80.0	76.4		ug/L		96	85 - 115
Selenium	80.0	76.1		ug/L		95	85 - 115
Zinc	80.0	73.6		ug/L		92	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-312912/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total Recoverable
Analysis Batch: 312977
Prep Batch: 312912

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium			80.0	76.2		ug/L		95	85 - 115	0	20
Copper			80.0	75.3		ug/L		94	85 - 115	3	20
Iron			800	781		ug/L		98	85 - 115	1	20
Lead			80.0	72.7		ug/L		91	85 - 115	3	20
Manganese			80.0	77.5		ug/L		97	85 - 115	1	20
Selenium			80.0	75.8		ug/L		95	85 - 115	0	20
Zinc			80.0	75.5		ug/L		94	85 - 115	3	20

Lab Sample ID: 570-131459-1 MS
Client Sample ID: Outfall018_20230316_Comp
Matrix: Water
Prep Type: Total Recoverable
Analysis Batch: 313047
Prep Batch: 312912

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND		80.0	79.6		ug/L		100	80 - 120
Copper	2.0		80.0	82.5		ug/L		101	80 - 120
Iron	11	J,DX	800	804		ug/L		99	80 - 120
Lead	ND		80.0	82.9		ug/L		104	80 - 120
Manganese	47		80.0	125		ug/L		98	80 - 120
Selenium	ND		80.0	77.3		ug/L		97	80 - 120
Zinc	ND		80.0	77.7		ug/L		97	80 - 120

Lab Sample ID: 570-131459-1 MSD
Client Sample ID: Outfall018_20230316_Comp
Matrix: Water
Prep Type: Total Recoverable
Analysis Batch: 313047
Prep Batch: 312912

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND		80.0	80.2		ug/L		100	80 - 120	1	20
Copper	2.0		80.0	84.5		ug/L		103	80 - 120	2	20
Iron	11	J,DX	800	829		ug/L		102	80 - 120	3	20
Lead	ND		80.0	83.8		ug/L		105	80 - 120	1	20
Manganese	47		80.0	128		ug/L		102	80 - 120	2	20
Selenium	ND		80.0	79.7		ug/L		100	80 - 120	3	20
Zinc	ND		80.0	78.9		ug/L		99	80 - 120	2	20

Lab Sample ID: MB 570-312519/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 312599

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L			03/17/23 11:16	1
Copper	ND		2.0	0.32	ug/L			03/17/23 11:16	1
Iron	ND		20	3.7	ug/L			03/17/23 11:16	1
Lead	ND		1.0	0.12	ug/L			03/17/23 11:16	1
Manganese	ND		1.0	0.41	ug/L			03/17/23 11:16	1
Selenium	ND		2.0	0.52	ug/L			03/17/23 11:16	1
Zinc	ND		20	2.8	ug/L			03/17/23 11:16	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-312519/2-A
Matrix: Water
Analysis Batch: 312599

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	79.0		ug/L		99	85 - 115
Copper	80.0	78.7		ug/L		98	85 - 115
Iron	800	800		ug/L		100	85 - 115
Lead	80.0	75.2		ug/L		94	85 - 115
Manganese	80.0	81.8		ug/L		102	85 - 115
Selenium	80.0	79.5		ug/L		99	85 - 115
Zinc	80.0	77.0		ug/L		96	85 - 115

Lab Sample ID: LCSD 570-312519/3-A
Matrix: Water
Analysis Batch: 312599

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	79.4		ug/L		99	85 - 115	0	20
Copper	80.0	78.8		ug/L		98	85 - 115	0	20
Iron	800	815		ug/L		102	85 - 115	2	20
Lead	80.0	76.2		ug/L		95	85 - 115	1	20
Manganese	80.0	81.4		ug/L		102	85 - 115	0	20
Selenium	80.0	78.2		ug/L		98	85 - 115	2	20
Zinc	80.0	77.9		ug/L		97	85 - 115	1	20

Lab Sample ID: 570-131459-2 MS
Matrix: Water
Analysis Batch: 312599

Client Sample ID: Outfall018_20230316_Comp_F
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND	BU	80.0	71.6	BU	ug/L		89	80 - 120
Copper	1.8	J,DX BU	80.0	71.7	BU	ug/L		87	80 - 120
Iron	6.7	J,DX BU	800	722	BU	ug/L		89	80 - 120
Lead	ND	BU	80.0	67.8	BU	ug/L		85	80 - 120
Manganese	38	BU	80.0	109	BU	ug/L		89	80 - 120
Selenium	0.93	J,DX BU	80.0	74.2	BU	ug/L		92	80 - 120
Zinc	ND	BU	80.0	70.2	BU	ug/L		88	80 - 120

Lab Sample ID: 570-131459-2 MSD
Matrix: Water
Analysis Batch: 312599

Client Sample ID: Outfall018_20230316_Comp_F
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND	BU	80.0	72.2	BU	ug/L		90	80 - 120	1	20
Copper	1.8	J,DX BU	80.0	73.2	BU	ug/L		89	80 - 120	2	20
Iron	6.7	J,DX BU	800	749	BU	ug/L		93	80 - 120	4	20
Lead	ND	BU	80.0	69.4	BU	ug/L		87	80 - 120	2	20
Manganese	38	BU	80.0	112	BU	ug/L		93	80 - 120	3	20
Selenium	0.93	J,DX BU	80.0	76.9	BU	ug/L		95	80 - 120	4	20
Zinc	ND	BU	80.0	69.9	BU	ug/L		87	80 - 120	0	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-313200/1-A
Matrix: Water
Analysis Batch: 313501
Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 313200

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/20/23 23:29	03/21/23 15:55	1

Lab Sample ID: LCS 570-313200/2-A
Matrix: Water
Analysis Batch: 313501
Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 313200

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	8.39		ug/L		105	85 - 115

Lab Sample ID: LCSD 570-313200/3-A
Matrix: Water
Analysis Batch: 313501
Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 313200

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	8.00	7.96		ug/L		100	85 - 115	5	10

Lab Sample ID: 570-131459-1 MS
Matrix: Water
Analysis Batch: 313501
Client Sample ID: Outfall018_20230316_Comp
Prep Type: Total/NA
Prep Batch: 313200

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		8.00	8.43		ug/L		105	85 - 115

Lab Sample ID: 570-131459-1 MSD
Matrix: Water
Analysis Batch: 313501
Client Sample ID: Outfall018_20230316_Comp
Prep Type: Total/NA
Prep Batch: 313200

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		8.00	8.36		ug/L		105	85 - 115	1	10

Lab Sample ID: MB 570-312367/1-B
Matrix: Water
Analysis Batch: 313082
Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 312369

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/16/23 21:34	03/20/23 14:31	1

Lab Sample ID: LCS 570-312367/2-B
Matrix: Water
Analysis Batch: 313082
Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 312369

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	8.00	8.11		ug/L		101	85 - 115

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: LCSD 570-312367/3-B
Matrix: Water
Analysis Batch: 313082

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 312369

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			8.00	8.01		ug/L		100	85 - 115	1	10

Lab Sample ID: 570-131459-2 MS
Matrix: Water
Analysis Batch: 313082

Client Sample ID: Outfall018_20230316_Comp_F
Prep Type: Dissolved
Prep Batch: 312369

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	ND	BU	8.00	8.20	BU	ug/L		103	85 - 115		

Lab Sample ID: 570-131459-2 MSD
Matrix: Water
Analysis Batch: 313082

Client Sample ID: Outfall018_20230316_Comp_F
Prep Type: Dissolved
Prep Batch: 312369

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND	BU	8.00	8.07	BU	ug/L		101	85 - 115	2	10

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-315808/5-A
Matrix: Water
Analysis Batch: 315825

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 315808

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		03/29/23 12:02	03/29/23 13:33	1

Lab Sample ID: LCS 570-315808/6-A
Matrix: Water
Analysis Batch: 315825

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315808

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Ammonia			0.500	0.486		mg/L		97	90 - 110		

Lab Sample ID: LCSD 570-315808/7-A
Matrix: Water
Analysis Batch: 315825

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 315808

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia			0.500	0.487		mg/L		97	90 - 110	0	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-309190/11
Matrix: Water
Analysis Batch: 309190

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			03/27/23 12:56	1

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate (Continued)

Lab Sample ID: LCS 570-309190/12
Matrix: Water
Analysis Batch: 309190

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	259		ug/L		104	90 - 110

Lab Sample ID: LCSD 570-309190/13
Matrix: Water
Analysis Batch: 309190

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	250	271		ug/L		109	90 - 110	5	20

Lab Sample ID: MRL 570-309190/10
Matrix: Water
Analysis Batch: 309190

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	5.38		ug/L		108	50 - 150

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-312592/3
Matrix: Water
Analysis Batch: 312592

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-313188/1
Matrix: Water
Analysis Batch: 313188

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			03/20/23 21:08	1

Lab Sample ID: LCS 570-313188/2
Matrix: Water
Analysis Batch: 313188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	1040		mg/L		104	84 - 108

Lab Sample ID: LCSD 570-313188/3
Matrix: Water
Analysis Batch: 313188

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1040		mg/L		104	84 - 108	0	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-313845/1
Matrix: Water
Analysis Batch: 313845
Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			03/22/23 14:52	1

Lab Sample ID: LCS 570-313845/2
Matrix: Water
Analysis Batch: 313845
Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	95.0		mg/L		95	77 - 116		

Lab Sample ID: LCSD 570-313845/3
Matrix: Water
Analysis Batch: 313845
Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	96.0		mg/L		96	77 - 116	1	10

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: LCS 570-312571/2-A
Matrix: Water
Analysis Batch: 314247
Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312571

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Biochemical Oxygen Demand			199	196		mg/L		99	84.6 - 115.4		

Lab Sample ID: 570-131459-1 DU
Matrix: Water
Analysis Batch: 314247
Client Sample ID: Outfall018_20230316_Comp
Prep Type: Total/NA
Prep Batch: 312571

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Biochemical Oxygen Demand	3.0			2.89		mg/L				4	25

Lab Sample ID: USB 570-314247/2
Matrix: Water
Analysis Batch: 314247
Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L			03/17/23 12:13	1

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-312366/5-A
Matrix: Water
Analysis Batch: 312365
Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 312366

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.20	0.050	mg/L		03/16/23 19:30	03/16/23 20:46	1

Method: SM 5540C - Methylene Blue Active Substances (MBAS) (Continued)

Lab Sample ID: LCS 570-312366/6-A
Matrix: Water
Analysis Batch: 312365

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312366

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
MBAS			0.500	0.433		mg/L		87	83 - 122		

Lab Sample ID: LCSD 570-312366/7-A
Matrix: Water
Analysis Batch: 312365

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 312366

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS			0.500	0.433		mg/L		87	83 - 122	0	10

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

GC/MS Semi VOA

Prep Batch: 313228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	625	
MB 570-313228/1-A	Method Blank	Total/NA	Water	625	
LCS 570-313228/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-313228/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 314108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-313228/1-A	Method Blank	Total/NA	Water	625.1 SIM	313228
LCS 570-313228/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	313228
LCSD 570-313228/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	313228

Analysis Batch: 316925

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	625.1 SIM	313228

GC Semi VOA

Prep Batch: 313866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	608	
MB 570-313866/1-A	Method Blank	Total/NA	Water	608	
LCS 570-313866/2-A	Lab Control Sample	Total/NA	Water	608	
LCSD 570-313866/3-A	Lab Control Sample Dup	Total/NA	Water	608	

Analysis Batch: 313951

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-313866/1-A	Method Blank	Total/NA	Water	608.3	313866
LCS 570-313866/2-A	Lab Control Sample	Total/NA	Water	608.3	313866
LCSD 570-313866/3-A	Lab Control Sample Dup	Total/NA	Water	608.3	313866

Analysis Batch: 314256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	608.3	313866

HPLC/IC

Analysis Batch: 312052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	300.0	
MB 570-312052/5	Method Blank	Total/NA	Water	300.0	
LCS 570-312052/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-312052/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 312053

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	300.0	
MB 570-312053/5	Method Blank	Total/NA	Water	300.0	
LCS 570-312053/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-312053/7	Lab Control Sample Dup	Total/NA	Water	300.0	

HPLC/IC

Analysis Batch: 312587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	314.0	
MB 570-312587/7	Method Blank	Total/NA	Water	314.0	
LCS 570-312587/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-312587/9	Lab Control Sample Dup	Total/NA	Water	314.0	

Analysis Batch: 314475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	NO2NO3 Calc	

Metals

Filtration Batch: 312367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-2	Outfall018_20230316_Comp_F	Dissolved	Water	Filtration	
MB 570-312367/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-312367/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-312367/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-131459-2 MS	Outfall018_20230316_Comp_F	Dissolved	Water	Filtration	
570-131459-2 MSD	Outfall018_20230316_Comp_F	Dissolved	Water	Filtration	

Prep Batch: 312369

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-2	Outfall018_20230316_Comp_F	Dissolved	Water	245.1	312367
MB 570-312367/1-B	Method Blank	Dissolved	Water	245.1	312367
LCS 570-312367/2-B	Lab Control Sample	Dissolved	Water	245.1	312367
LCSD 570-312367/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	312367
570-131459-2 MS	Outfall018_20230316_Comp_F	Dissolved	Water	245.1	312367
570-131459-2 MSD	Outfall018_20230316_Comp_F	Dissolved	Water	245.1	312367

Filtration Batch: 312519

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-2	Outfall018_20230316_Comp_F	Dissolved	Water	Filtration	
MB 570-312519/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-312519/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-312519/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-131459-2 MS	Outfall018_20230316_Comp_F	Dissolved	Water	Filtration	
570-131459-2 MSD	Outfall018_20230316_Comp_F	Dissolved	Water	Filtration	

Analysis Batch: 312599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-2	Outfall018_20230316_Comp_F	Dissolved	Water	200.8	312519
MB 570-312519/1-A	Method Blank	Dissolved	Water	200.8	312519
LCS 570-312519/2-A	Lab Control Sample	Dissolved	Water	200.8	312519
LCSD 570-312519/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	312519
570-131459-2 MS	Outfall018_20230316_Comp_F	Dissolved	Water	200.8	312519
570-131459-2 MSD	Outfall018_20230316_Comp_F	Dissolved	Water	200.8	312519

Prep Batch: 312912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total Recoverable	Water	200.8	

Metals (Continued)

Prep Batch: 312912 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-312912/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-312912/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-312912/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-131459-1 MS	Outfall018_20230316_Comp	Total Recoverable	Water	200.8	
570-131459-1 MSD	Outfall018_20230316_Comp	Total Recoverable	Water	200.8	

Analysis Batch: 312977

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-312912/1-A	Method Blank	Total Recoverable	Water	200.8	312912
LCS 570-312912/2-A	Lab Control Sample	Total Recoverable	Water	200.8	312912
LCSD 570-312912/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	312912

Analysis Batch: 313047

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total Recoverable	Water	200.8	312912
570-131459-1 MS	Outfall018_20230316_Comp	Total Recoverable	Water	200.8	312912
570-131459-1 MSD	Outfall018_20230316_Comp	Total Recoverable	Water	200.8	312912

Analysis Batch: 313082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-2	Outfall018_20230316_Comp_F	Dissolved	Water	245.1	312369
MB 570-312367/1-B	Method Blank	Dissolved	Water	245.1	312369
LCS 570-312367/2-B	Lab Control Sample	Dissolved	Water	245.1	312369
LCSD 570-312367/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	312369
570-131459-2 MS	Outfall018_20230316_Comp_F	Dissolved	Water	245.1	312369
570-131459-2 MSD	Outfall018_20230316_Comp_F	Dissolved	Water	245.1	312369

Prep Batch: 313200

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	245.1	
MB 570-313200/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-313200/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-313200/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
570-131459-1 MS	Outfall018_20230316_Comp	Total/NA	Water	245.1	
570-131459-1 MSD	Outfall018_20230316_Comp	Total/NA	Water	245.1	

Analysis Batch: 313501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	245.1	313200
MB 570-313200/1-A	Method Blank	Total/NA	Water	245.1	313200
LCS 570-313200/2-A	Lab Control Sample	Total/NA	Water	245.1	313200
LCSD 570-313200/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	313200
570-131459-1 MS	Outfall018_20230316_Comp	Total/NA	Water	245.1	313200
570-131459-1 MSD	Outfall018_20230316_Comp	Total/NA	Water	245.1	313200

General Chemistry

Analysis Batch: 309190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	Kelada 01	

General Chemistry (Continued)

Analysis Batch: 309190 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-309190/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-309190/12	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-309190/13	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-309190/10	Lab Control Sample	Total/NA	Water	Kelada 01	

Analysis Batch: 312365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	SM 5540C	312366
MB 570-312366/5-A	Method Blank	Total/NA	Water	SM 5540C	312366
LCS 570-312366/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	312366
LCSD 570-312366/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	312366

Prep Batch: 312366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	SM 5540C	
MB 570-312366/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-312366/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-312366/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	

Prep Batch: 312571

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	BOD Prep	
LCS 570-312571/2-A	Lab Control Sample	Total/NA	Water	BOD Prep	
570-131459-1 DU	Outfall018_20230316_Comp	Total/NA	Water	BOD Prep	

Analysis Batch: 312592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	SM 2130B	
LCSSRM 570-312592/3	Lab Control Sample	Total/NA	Water	SM 2130B	

Analysis Batch: 313188

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	SM 2540C	
MB 570-313188/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-313188/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-313188/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 313845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	SM 2540D	
MB 570-313845/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-313845/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-313845/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 314247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	SM 5210B	312571
USB 570-314247/2	Method Blank	Total/NA	Water	SM 5210B	
LCS 570-312571/2-A	Lab Control Sample	Total/NA	Water	SM 5210B	312571
570-131459-1 DU	Outfall018_20230316_Comp	Total/NA	Water	SM 5210B	312571

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Comp

General Chemistry

Prep Batch: 315808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	Distill/Ammonia	
MB 570-315808/5-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-315808/6-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-315808/7-A	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 315825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	350.1	315808
MB 570-315808/5-A	Method Blank	Total/NA	Water	350.1	315808
LCS 570-315808/6-A	Lab Control Sample	Total/NA	Water	350.1	315808
LCSD 570-315808/7-A	Lab Control Sample Dup	Total/NA	Water	350.1	315808

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Comp

Client Sample ID: Outfall018_20230316_Comp
Lab Sample ID: 570-131459-1
Date Collected: 03/16/23 07:45
Matrix: Water
Date Received: 03/16/23 17:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			1061.5 mL	2 mL	313228	03/22/23 05:11	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	316925	04/03/23 18:36	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Prep	608			1500 mL	1 mL	313866	03/22/23 15:44	OAJ3	EET CAL 4
Total/NA	Analysis	608.3		1	1 mL	1 mL	314256	03/24/23 04:12	N5Y3	EET CAL 4
	Instrument ID: GC52A									
Total/NA	Analysis	300.0		2	4 mL	4 mL	312052	03/17/23 04:27	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	300.0		2	4 mL	4 mL	312053	03/17/23 04:27	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	314.0		1	4 mL	4 mL	312587	03/18/23 00:39	PS	EET CAL 4
	Instrument ID: IC8									
Total/NA	Analysis	NO2NO3 Calc		1			314475	03/24/23 10:42	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total Recoverable	Prep	200.8			50 mL	50 mL	312912	03/20/23 07:23	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			313047	03/20/23 10:41	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Prep	245.1			25 mL	50 mL	313200	03/20/23 23:29	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			313501	03/21/23 16:01	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	315808	03/29/23 12:02	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	315825	03/29/23 13:40	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	309190	03/27/23 14:43	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			312592	03/17/23 13:46	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	313188	03/20/23 21:08	ZL7L	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	313845	03/22/23 14:52	BDH9	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Prep	BOD Prep					312571	03/17/23 12:09	U7UR	EET CAL 4
Total/NA	Analysis	SM 5210B		1	300 mL	300 mL	314247	03/17/23 12:45	U7UR	EET CAL 4
	Instrument ID: BOD3									
Total/NA	Prep	SM 5540C			100 mL	100 mL	312366	03/16/23 19:30	TXA8	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	312365	03/16/23 20:57	TXA8	EET CAL 4
	Instrument ID: UV8									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Comp

Client Sample ID: Outfall018_20230316_Comp_F
Lab Sample ID: 570-131459-2
Date Collected: 03/16/23 07:45
Matrix: Water
Date Received: 03/16/23 17:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	312519	03/17/23 10:23	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			312599	03/17/23 11:31	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	312367	03/16/23 21:15	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	312369	03/16/23 21:34	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			313082	03/20/23 14:18	C0YH	EET CAL 4
	Instrument ID: HG8									

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method	Method Description	Protocol	Laboratory
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
608.3	Organochlorine Pesticides in Water	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 5210B	BOD, 5-Day	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
608	Liquid-Liquid Extraction (Separatory Funnel)	EPA	EET CAL 4
625	Liquid-Liquid Extraction	EPA	EET CAL 4
BOD Prep	Preparation, BOD	SM	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Job ID: 570-131459-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131459-1	Outfall018_20230316_Comp	Water	03/16/23 07:45	03/16/23 17:45
570-131459-2	Outfall018_20230316_Comp_F	Water	03/16/23 07:45	03/16/23 17:45

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-131459 Chain of Custody

Loc: 570
131459

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 **ECI Project #57013187**	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Project Manager: Katherine Miller** 520.289.8606, 520.904.6944 (cell)
Sampler: Adrian Mobeka	**Field Manager: Mark Dominick** 978.234.5033, 818.599.0702 (cell)

									ANALYSIS REQUIRED															
									R	R	R	R	R	R	R	R	R	R	R	C				
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl-, SO_4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	Turbidity, TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)				Comments
Outfall 018	Outfall018_20230316_Comp	3/16/2023 /0745	WM	500 mL Poly	1	HNO_3	90	Yes	X										X					
			WM	1 L Glass Amber	2	None	110	No		X														
			WM	1L Poly	1	None	115	No			X													
			WM	500 mL Poly	2	None	120	No				X												
			WM	500 mL Poly	2	None	130	No					X											48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X										48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X								
			WM	1 L Glass Amber	2	None	170	No									X							
			WM	1 L Glass Amber	2	None	180	No										X						
			WM	1L Poly	1	None	185	No							X									

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
	3-16-2023/	H:A		3/16/23 1205 EC
	3/16/23	1745 EC		3/16/23 17:45 EC

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

3.2/3.2 2.9/2.9 SCII

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:	ANALYSIS REQUIRED
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp	
Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 ECI Project #57013187		
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R: Total Dissolved Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	R: Cyanide (SM4500-CN-E / E335.2)	R: Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R	R: Total Dissolved Metals: Mercury (E245.1)	C						Comments
Outfall 018	Outfall018_20230316_Comp_F	3/16/2023 1045	WM	1L Poly	1	None	200	Yes	X										
			WM	borosilicate vials	2	None	320	No					X						Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230316_Comp	3/16/2023 1045	WM	500 mL Poly	1	NaOH	220	No		X									
			WM	2.5 Gal Cube	1	None	225	No			X								Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No											

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
M Dominick	3-16-2023 1205	H:A	[illegible]	3/16/23 1205 EC
[illegible]	3/16/23 1745	EC	[illegible]	3/16/23 17:45 EC
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131459-1

Login Number: 131459
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/13/2023 4:15:04 PM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall - 018 Comp

JOB NUMBER

570-131459-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Eurofins Calscience

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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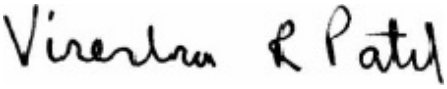

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Authorized for release by
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Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131459-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131459-2

Comments
No additional comments.

Receipt
The samples were received on 3/16/2023 5:45 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.2º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: Outfall018_20230316_Comp (570-131459-1) and (CCV 320-666485/17). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: (CCV 320-666475/1), (LCS 320-665579/2-A), (LCSD 320-665579/3-A) and (MB 320-665579/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: (CCV 320-667316/2) and (MB 320-665579/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Comp

Client Sample ID: Outfall018_20230316_Comp
Lab Sample ID: 570-131459-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	0.0000020	J,DX q MB	0.000047	0.000000033	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000050	J,DX MB	0.000047	0.00000013	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000042	J,DX q MB	0.000047	0.00000010	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000017	J,DX q MB	0.000047	0.00000011	ug/L	1		1613B	Total/NA
OCDD	0.000035	J,DX MB	0.000094	0.00000021	ug/L	1		1613B	Total/NA
OCDF	0.0000089	J,DX MB	0.000094	0.00000015	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000020	J,DX q MB	0.000047	0.000000031	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000087	J,DX MB	0.000047	0.00000013	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000080	J,DX q MB	0.000047	0.00000011	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: Outfall018_20230316_Comp
Date Collected: 03/16/23 07:45
Date Received: 03/16/23 17:45

Lab Sample ID: 570-131459-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000094	0.00000013	ug/L		04/05/23 04:38	04/10/23 20:09	1
2,3,7,8-TCDF	ND		0.0000094	0.00000059	ug/L		04/05/23 04:38	04/10/23 20:09	1
1,2,3,7,8-PeCDD	ND		0.000047	0.00000017	ug/L		04/05/23 04:38	04/10/23 20:09	1
1,2,3,7,8-PeCDF	ND		0.000047	0.00000016	ug/L		04/05/23 04:38	04/10/23 20:09	1
2,3,4,7,8-PeCDF	ND		0.000047	0.00000018	ug/L		04/05/23 04:38	04/10/23 20:09	1
1,2,3,4,7,8-HxCDD	**0.0000020**	**J,DX q MB**	0.000047	0.00000033	ug/L		04/05/23 04:38	04/10/23 20:09	1
1,2,3,6,7,8-HxCDD	ND		0.000047	0.00000031	ug/L		04/05/23 04:38	04/10/23 20:09	1
1,2,3,7,8,9-HxCDD	ND		0.000047	0.00000029	ug/L		04/05/23 04:38	04/10/23 20:09	1
1,2,3,4,7,8-HxCDF	ND		0.000047	0.00000038	ug/L		04/05/23 04:38	04/10/23 20:09	1
1,2,3,6,7,8-HxCDF	ND		0.000047	0.00000039	ug/L		04/05/23 04:38	04/10/23 20:09	1
1,2,3,7,8,9-HxCDF	ND		0.000047	0.00000042	ug/L		04/05/23 04:38	04/10/23 20:09	1
2,3,4,6,7,8-HxCDF	ND		0.000047	0.00000038	ug/L		04/05/23 04:38	04/10/23 20:09	1
1,2,3,4,6,7,8-HpCDD	**0.0000050**	**J,DX MB**	0.000047	0.0000001 3	ug/L		04/05/23 04:38	04/10/23 20:09	1
1,2,3,4,6,7,8-HpCDF	**0.0000042**	**J,DX q MB**	0.000047	0.0000001 0	ug/L		04/05/23 04:38	04/10/23 20:09	1
1,2,3,4,7,8,9-HpCDF	**0.0000017**	**J,DX q MB**	0.000047	0.00000011	ug/L		04/05/23 04:38	04/10/23 20:09	1
OCDD	**0.000035**	**J,DX MB**	0.000094	0.0000002 1	ug/L		04/05/23 04:38	04/10/23 20:09	1
OCDF	**0.0000089**	**J,DX MB**	0.000094	0.0000001 5	ug/L		04/05/23 04:38	04/10/23 20:09	1
Total TCDD	ND		0.0000094	0.00000013	ug/L		04/05/23 04:38	04/10/23 20:09	1
Total TCDF	ND		0.0000094	0.00000059	ug/L		04/05/23 04:38	04/10/23 20:09	1
Total PeCDD	ND		0.000047	0.00000017	ug/L		04/05/23 04:38	04/10/23 20:09	1
Total PeCDF	ND		0.000047	0.00000018	ug/L		04/05/23 04:38	04/10/23 20:09	1
Total HxCDD	**0.0000020**	**J,DX q MB**	0.000047	0.00000031	ug/L		04/05/23 04:38	04/10/23 20:09	1
Total HxCDF	ND		0.000047	0.00000042	ug/L		04/05/23 04:38	04/10/23 20:09	1
Total HpCDD	**0.0000087**	**J,DX MB**	0.000047	0.0000001 3	ug/L		04/05/23 04:38	04/10/23 20:09	1
Total HpCDF	**0.0000080**	**J,DX q MB**	0.000047	0.00000011	ug/L		04/05/23 04:38	04/10/23 20:09	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*76*		*25 - 164*	*04/05/23 04:38*	*04/10/23 20:09*	*1*
13C-2,3,7,8-TCDF	*69*		*24 - 169*	*04/05/23 04:38*	*04/10/23 20:09*	*1*
13C-1,2,3,7,8-PeCDD	*81*		*25 - 181*	*04/05/23 04:38*	*04/10/23 20:09*	*1*
13C-1,2,3,7,8-PeCDF	*72*		*24 - 185*	*04/05/23 04:38*	*04/10/23 20:09*	*1*
13C-2,3,4,7,8-PeCDF	*70*		*21 - 178*	*04/05/23 04:38*	*04/10/23 20:09*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: Outfall018_20230316_Comp
Lab Sample ID: 570-131459-1
Date Collected: 03/16/23 07:45
Matrix: Water
Date Received: 03/16/23 17:45

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,7,8-HxCDD	65		32 - 141	04/05/23 04:38	04/10/23 20:09	1
13C-1,2,3,6,7,8-HxCDD	75		28 - 130	04/05/23 04:38	04/10/23 20:09	1
13C-1,2,3,4,7,8-HxCDF	68		26 - 152	04/05/23 04:38	04/10/23 20:09	1
13C-1,2,3,6,7,8-HxCDF	71		26 - 123	04/05/23 04:38	04/10/23 20:09	1
13C-1,2,3,7,8,9-HxCDF	69		29 - 147	04/05/23 04:38	04/10/23 20:09	1
13C-2,3,4,6,7,8-HxCDF	71		28 - 136	04/05/23 04:38	04/10/23 20:09	1
13C-1,2,3,4,6,7,8-HpCDD	75		23 - 140	04/05/23 04:38	04/10/23 20:09	1
13C-1,2,3,4,6,7,8-HpCDF	66		28 - 143	04/05/23 04:38	04/10/23 20:09	1
13C-1,2,3,4,7,8,9-HpCDF	71		26 - 138	04/05/23 04:38	04/10/23 20:09	1
13C-OCDD	64		17 - 157	04/05/23 04:38	04/10/23 20:09	1
13C-OCDF	66		17 - 157	04/05/23 04:38	04/10/23 20:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	96		35 - 197	04/05/23 04:38	04/10/23 20:09	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Comp

Job ID: 570-131459-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (35-197)								
570-131459-1	Outfall018_20230316_Comp	96								
MB 320-665579/1-A	Method Blank	95								
MB 320-665579/1-A - RA	Method Blank	96								

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (31-191)								
LCS 320-665579/2-A	Lab Control Sample	98								
LCSD 320-665579/3-A	Lab Control Sample Dup	96								

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Job ID: 570-131459-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-131459-1	Outfall018_20230316_Comp	76	69	81	72	70	65	75	68
MB 320-665579/1-A	Method Blank	74	77	74	72	69	67	72	70
MB 320-665579/1-A - RA	Method Blank		73						

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-131459-1	Outfall018_20230316_Comp	71	69	71	75	66	71	64	66
MB 320-665579/1-A	Method Blank	73	73	75	69	58	66	59	59
MB 320-665579/1-A - RA	Method Blank								

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-665579/2-A	Lab Control Sample	71	70	67	66	65	64	66	63
LCSD 320-665579/3-A	Lab Control Sample Dup	69	72	78	73	73	71	71	73

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-665579/2-A	Lab Control Sample	67	70	68	62	59	64	63	62
LCSD 320-665579/3-A	Lab Control Sample Dup	72	75	73	80	66	77	73	72

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc. Job ID: 570-131459-2

Project/Site: Boeing NPDES SSFL - Routine Outfall - 018

Comp

HxDD = 13C-1,2,3,6,7,8-HxCDD

HxCDF = 13C-1,2,3,4,7,8-HxCDF

HxDF = 13C-1,2,3,6,7,8-HxCDF

HxCF = 13C-1,2,3,7,8,9-HxCDF

13CHxCF = 13C-2,3,4,6,7,8-HxCDF

HpCDD = 13C-1,2,3,4,6,7,8-HpCDD

HpCDF = 13C-1,2,3,4,6,7,8-HpCDF

HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF

OCDD = 13C-OCDD

OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-665579/1-A
Matrix: Water
Analysis Batch: 666475

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 665579

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000011	ug/L		04/05/23 04:38	04/08/23 14:31	1
1,2,3,7,8-PeCDD	ND		0.000050	0.000000076	ug/L		04/05/23 04:38	04/08/23 14:31	1
1,2,3,7,8-PeCDF	ND		0.000050	0.000000022	ug/L		04/05/23 04:38	04/08/23 14:31	1
2,3,4,7,8-PeCDF	ND		0.000050	0.000000027	ug/L		04/05/23 04:38	04/08/23 14:31	1
1,2,3,4,7,8-HxCDD	0.00000249	J,DX q	0.000050	0.000000085	ug/L		04/05/23 04:38	04/08/23 14:31	1
1,2,3,6,7,8-HxCDD	ND		0.000050	0.000000080	ug/L		04/05/23 04:38	04/08/23 14:31	1
1,2,3,7,8,9-HxCDD	0.00000297	J,DX	0.000050	0.000000075	ug/L		04/05/23 04:38	04/08/23 14:31	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.00000012	ug/L		04/05/23 04:38	04/08/23 14:31	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000012	ug/L		04/05/23 04:38	04/08/23 14:31	1
1,2,3,7,8,9-HxCDF	0.00000112	J,DX q	0.000050	0.00000014	ug/L		04/05/23 04:38	04/08/23 14:31	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.00000012	ug/L		04/05/23 04:38	04/08/23 14:31	1
1,2,3,4,6,7,8-HpCDD	0.00000416	J,DX q	0.000050	0.000000084	ug/L		04/05/23 04:38	04/08/23 14:31	1
1,2,3,4,6,7,8-HpCDF	0.00000460	J,DX	0.000050	0.00000012	ug/L		04/05/23 04:38	04/08/23 14:31	1
1,2,3,4,7,8,9-HpCDF	0.00000255	J,DX q	0.000050	0.00000014	ug/L		04/05/23 04:38	04/08/23 14:31	1
OCDD	0.0000159	J,DX	0.00010	0.000000074	ug/L		04/05/23 04:38	04/08/23 14:31	1
OCDF	0.00000304	J,DX q	0.00010	0.00000017	ug/L		04/05/23 04:38	04/08/23 14:31	1
Total TCDD	ND		0.000010	0.0000012	ug/L		04/05/23 04:38	04/08/23 14:31	1
Total TCDF	0.00000254	J,DX q	0.000010	0.000000020	ug/L		04/05/23 04:38	04/08/23 14:31	1
Total PeCDD	ND		0.000050	0.00000031	ug/L		04/05/23 04:38	04/08/23 14:31	1
Total PeCDF	ND		0.000050	0.00000046	ug/L		04/05/23 04:38	04/08/23 14:31	1
Total HxCDD	0.00000546	J,DX q	0.000050	0.000000080	ug/L		04/05/23 04:38	04/08/23 14:31	1
Total HxCDF	0.00000112	J,DX q	0.000050	0.00000012	ug/L		04/05/23 04:38	04/08/23 14:31	1
Total HpCDD	0.00000791	J,DX q	0.000050	0.000000084	ug/L		04/05/23 04:38	04/08/23 14:31	1
Total HpCDF	0.00000715	J,DX q	0.000050	0.00000013	ug/L		04/05/23 04:38	04/08/23 14:31	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*74*		*25 - 164*	*04/05/23 04:38*	*04/08/23 14:31*	*1*
13C-2,3,7,8-TCDF	*77*		*24 - 169*	*04/05/23 04:38*	*04/08/23 14:31*	*1*
13C-1,2,3,7,8-PeCDD	*74*		*25 - 181*	*04/05/23 04:38*	*04/08/23 14:31*	*1*
13C-1,2,3,7,8-PeCDF	*72*		*24 - 185*	*04/05/23 04:38*	*04/08/23 14:31*	*1*
13C-2,3,4,7,8-PeCDF	*69*		*21 - 178*	*04/05/23 04:38*	*04/08/23 14:31*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-665579/1-A
Matrix: Water
Analysis Batch: 666475

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 665579

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,7,8-HxCDD	67		32 - 141	04/05/23 04:38	04/08/23 14:31	1
13C-1,2,3,6,7,8-HxCDD	72		28 - 130	04/05/23 04:38	04/08/23 14:31	1
13C-1,2,3,4,7,8-HxCDF	70		26 - 152	04/05/23 04:38	04/08/23 14:31	1
13C-1,2,3,6,7,8-HxCDF	73		26 - 123	04/05/23 04:38	04/08/23 14:31	1
13C-1,2,3,7,8,9-HxCDF	73		29 - 147	04/05/23 04:38	04/08/23 14:31	1
13C-2,3,4,6,7,8-HxCDF	75		28 - 136	04/05/23 04:38	04/08/23 14:31	1
13C-1,2,3,4,6,7,8-HpCDD	69		23 - 140	04/05/23 04:38	04/08/23 14:31	1
13C-1,2,3,4,6,7,8-HpCDF	58		28 - 143	04/05/23 04:38	04/08/23 14:31	1
13C-1,2,3,4,7,8,9-HpCDF	66		26 - 138	04/05/23 04:38	04/08/23 14:31	1
13C-OCDD	59		17 - 157	04/05/23 04:38	04/08/23 14:31	1
13C-OCDF	59		17 - 157	04/05/23 04:38	04/08/23 14:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	95		35 - 197	04/05/23 04:38	04/08/23 14:31	1

Lab Sample ID: LCS 320-665579/2-A
Matrix: Water
Analysis Batch: 666475

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 665579

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000185		ug/L		93	67 - 158
2,3,7,8-TCDF	0.000200	0.000193		ug/L		96	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.000912		ug/L		91	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.000860		ug/L		86	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000862		ug/L		86	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.000824	MB	ug/L		82	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000914		ug/L		91	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000911		ug/L		91	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.000896		ug/L		90	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000867		ug/L		87	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.000873		ug/L		87	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000885		ug/L		89	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.000856	MB	ug/L		86	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.000901	MB	ug/L		90	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000888	MB	ug/L		89	78 - 138
OCDD	0.00200	0.00175	MB	ug/L		88	78 - 144
OCDF	0.00200	0.00181	MB	ug/L		90	63 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	71		20 - 175
13C-2,3,7,8-TCDF	70		22 - 152
13C-1,2,3,7,8-PeCDD	67		21 - 227
13C-1,2,3,7,8-PeCDF	66		21 - 192
13C-2,3,4,7,8-PeCDF	65		13 - 328
13C-1,2,3,4,7,8-HxCDD	64		21 - 193
13C-1,2,3,6,7,8-HxCDD	66		25 - 163
13C-1,2,3,4,7,8-HxCDF	63		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-665579/2-A
Matrix: Water
Analysis Batch: 666475

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 665579

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	67		21 - 159
13C-1,2,3,7,8,9-HxCDF	70		17 - 205
13C-2,3,4,6,7,8-HxCDF	68		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	62		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	59		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	64		20 - 186
13C-OCDD	63		13 - 199
13C-OCDF	62		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	98		31 - 191

Lab Sample ID: LCSD 320-665579/3-A
Matrix: Water
Analysis Batch: 666475

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 665579

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000199		ug/L		99	67 - 158	7	50
2,3,7,8-TCDF			0.000200	0.000188		ug/L		94	75 - 158	2	50
1,2,3,7,8-PeCDD			0.00100	0.000868		ug/L		87	70 - 142	5	50
1,2,3,7,8-PeCDF			0.00100	0.000862		ug/L		86	80 - 134	0	50
2,3,4,7,8-PeCDF			0.00100	0.000854		ug/L		85	68 - 160	1	50
1,2,3,4,7,8-HxCDD			0.00100	0.000863	MB	ug/L		86	70 - 164	5	50
1,2,3,6,7,8-HxCDD			0.00100	0.000932		ug/L		93	76 - 134	2	50
1,2,3,7,8,9-HxCDD			0.00100	0.000914		ug/L		91	64 - 162	0	50
1,2,3,4,7,8-HxCDF			0.00100	0.000865		ug/L		87	72 - 134	3	50
1,2,3,6,7,8-HxCDF			0.00100	0.000884		ug/L		88	84 - 130	2	50
1,2,3,7,8,9-HxCDF			0.00100	0.000874		ug/L		87	78 - 130	0	50
2,3,4,6,7,8-HxCDF			0.00100	0.000866		ug/L		87	70 - 156	2	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000822	MB	ug/L		82	70 - 140	4	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.000892	MB	ug/L		89	82 - 122	1	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000870	MB	ug/L		87	78 - 138	2	50
OCDD			0.00200	0.00178	MB	ug/L		89	78 - 144	2	50
OCDF			0.00200	0.00181	MB	ug/L		91	63 - 170	0	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	69		20 - 175
13C-2,3,7,8-TCDF	72		22 - 152
13C-1,2,3,7,8-PeCDD	78		21 - 227
13C-1,2,3,7,8-PeCDF	73		21 - 192
13C-2,3,4,7,8-PeCDF	73		13 - 328
13C-1,2,3,4,7,8-HxCDD	71		21 - 193
13C-1,2,3,6,7,8-HxCDD	71		25 - 163
13C-1,2,3,4,7,8-HxCDF	73		19 - 202
13C-1,2,3,6,7,8-HxCDF	72		21 - 159
13C-1,2,3,7,8,9-HxCDF	75		17 - 205
13C-2,3,4,6,7,8-HxCDF	73		22 - 176

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-665579/3-A
Matrix: Water
Analysis Batch: 666475

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 665579

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDD	80		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	66		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	77		20 - 186
13C-OCDD	73		13 - 199
13C-OCDF	72		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	96		31 - 191

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Lab Sample ID: MB 320-665579/1-A
Matrix: Water
Analysis Batch: 667316

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 665579

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF - RA	0.000000457	J,DX q	0.000010	0.00000018	ug/L		04/05/23 04:38	04/12/23 16:27	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF - RA	73		24 - 169	04/05/23 04:38	04/12/23 16:27	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD - RA	96		35 - 197	04/05/23 04:38	04/12/23 16:27	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Specialty Organics

Prep Batch: 665579

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	1613B	
MB 320-665579/1-A - RA	Method Blank	Total/NA	Water	1613B	
MB 320-665579/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-665579/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-665579/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 666475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-665579/1-A	Method Blank	Total/NA	Water	1613B	665579
LCS 320-665579/2-A	Lab Control Sample	Total/NA	Water	1613B	665579
LCSD 320-665579/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	665579

Analysis Batch: 666485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	1613B	665579

Analysis Batch: 667316

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-665579/1-A - RA	Method Blank	Total/NA	Water	1613B	665579

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Comp

Client Sample ID: Outfall018_20230316_Comp
Lab Sample ID: 570-131459-1
Date Collected: 03/16/23 07:45
Matrix: Water
Date Received: 03/16/23 17:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			1064.5 mL	20.0 uL	665579	04/05/23 04:38	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	666485	04/10/23 20:09	GRB	EET SAC
	Instrument ID: DFS 1									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-24
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-24
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	02-28-26
Utah	NELAP	CA000442021-12	02-28-23 *
Virginia	NELAP	460278	03-14-24
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Job ID: 570-131459-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131459-1	Outfall018_20230316_Comp	Water	03/16/23 07:45	03/16/23 17:45

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-131459 Chain of Custody

Loc: 570
131459

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 **ECI Project #57013187**	**Project Manager: Katherine Miller** 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Field Manager: Mark Dominick** 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

									ANALYSIS REQUIRED																
									R	R	R	R	R	R	R	R	R	R	R	C				
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl-, SO_4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	Turbidity, TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)				Comments
Outfall 018	Outfall018_20230316_Comp	3/16/2023 1745	WM	500 mL Poly	1	HNO_3	90	Yes	X										X					
			WM	1 L Glass Amber	2	None	110	No		X														
			WM	1L Poly	1	None	115	No			X													
			WM	500 mL Poly	2	None	120	No				X												
			WM	500 mL Poly	2	None	130	No					X											48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X										48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X								
			WM	1 L Glass Amber	2	None	170	No									X							
			WM	1 L Glass Amber	2	None	180	No										X						
			WM	1L Poly	1	None	185	No							X									

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
[signature]	3-16-2023	H:A	[signature]	3/16/23 1205 EC
[signature]	3/16/23 1745	EC	[signature]	3/16/23 17:45 EC

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

3.2/3.2 2.9/2.9 SCII

CHAIN OF CUSTODY FORM

Client Name/Address:
Haley & Aldrich
5333 Mission Center Rd Suite 300
San Diego, CA 92108

Eurofins Calscience Irvine Contact: Virendra Patel
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Tel: 949-260-3218
ECI Project #57013187

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Sampler: Adrian Mobeka

Project:
Boeing-SSFL NPDES
Permit 2023
Routine Outfall [001, 002, 011, 018]
Outfall 018
Comp

Project Manager: Katherine Miller
520.289.8606, 520.904.6944 (cell)
Field Manager: Mark Dominick
978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)		Total Dissolved Metals: Mercury (E245.1)							Comments
									R	R	R	R	R	C						
Outfall 018	Outfall018_20230316_Comp_F	3/16/2023 /0745	WM	1L Poly	1	None	200	Yes	X											
			WM	borosilicate vials	2	None	320	No					X							Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230316_Comp	3/16/2023 /0745	WM	500 mL Poly	1	NaOH	220	No		X										
			WM	2.5 Gal Cube	1	None	225	No			X									Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No												

ANALYSIS REQUIRED

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:	
M Dominick	3-16-2023/1205	H:A	[signature]	3/16/23 1205	EC
[signature]	3/16/23 1745	EC	[signature]	3/16/23 17:45	EC

Turn-around time: (Check)
24 Hour: ______ 72 Hour: ______ 10 Day: ___X___
48 Hour: ______ 5 Day: ______ Normal: ______

Sample Integrity: (Check)
Intact: ______ On Ice: ______
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: ______ All Level IV: ___X___

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-211007.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-131459-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 4/3/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall - 018 Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall018_20230316_Comp (570-131459-1)	3/16/23	07:45 Pacific		Water			X	2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	03/17/23 7:40	EC	[signature]	3/18/23 910	ECCSM
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131459-2

Login Number: 131459
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131459-2

Login Number: 131459
List Number: 2
Creator: Guzman, Juan

List Source: Eurofins Sacramento
List Creation: 03/18/23 12:13 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall - 018 Comp

JOB NUMBER

570-131459-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Eurofins Calscience

Job Notes

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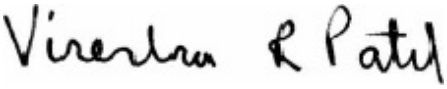
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Qualifiers

Rad

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131459-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131459-3

Comments
No additional comments.

Receipt
The samples were received on 3/16/2023 5:45 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.2º C.

RAD
Method 900.0: Gross Alpha and Gross Beta batch 606931
The matrix spike (MS) recoveries for Gross Alpha were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.
(570-131459-Q-1-G MS)

Method 900.0: Gross Alpha and Gross Beta batch 606931
The detection goal was not met for the sample duplicate. However the purpose of the DUP is to demonstrate batch precision. The precision was within control limits demonstrating no adverse effect from the discrepancy.

(570-131459-Q-1-I DU)

Method 900.0: Gross Alpha and Gross Beta batch 606931
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230316_Comp (570-131459-1), (LCS 160-606931/2-A), (LCSB 160-606931/3-A), (MB 160-606931/1-A), (570-131459-Q-1-I DU), (570-131459-Q-1-G MS) and (570-131459-Q-1-H MSBT)

Method 901.1: Gamma Prep Batch 160-604735
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Job ID: 570-131459-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Outfall018_20230316_Comp (570-131459-1), (570-129084-R-1-F) and (570-129084-R-1-H DU)

Method 903.0: Radium-226 batch 605061
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230316_Comp (570-131459-1), (LCS 160-605061/2-A), (MB 160-605061/1-A), (660-127969-B-7-A) and (660-127969-D-7-A DU)

Method 904.0: Radium-228 batch 605065
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230316_Comp (570-131459-1), (LCS 160-605065/2-A), (MB 160-605065/1-A), (660-127969-B-7-B) and (660-127969-D-7-B DU)

Method 904.0: Radium 228 batch 605065
The method blank (MB) has activity above the MDC and RL. The following associated samples are below the reporting limit for the contaminant therefore, re-analysis is not required. The data have been reported.

(MB 160-605065/1-A)

Method 905: Strontium-90 batch 605090
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230316_Comp (570-131459-1), (LCS 160-605090/2-A), (MB 160-605090/1-A), (380-41106-B-1-A) and (380-41106-C-1-A DU)

Method 906.0: Tritium 607088
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall018_20230316_Comp (570-131459-1), (LCS 160-607088/2-A), (MB 160-607088/1-A), (160-49538-A-1-A), (160-49538-A-1-C DU) and (570-131459-R-1-C MS)

Method A-01-R: Isotopic Uranium batch 605729
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230316_Comp (570-131459-1), (LCS 160-605729/2-A), (MB 160-605729/1-A), (570-131449-AX-1-B) and (570-131449-AX-1-C DU)

Method PrecSep_0:

Method PrecSep-21:

Method PrecSep-7: Strontium 90 Prep Batch 160-605090

Job ID: 570-131459-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

The following sample was prepared at a reduced aliquot due to Matrix: Outfall018_20230316_Comp (570-131459-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Client Sample ID: Outfall018_20230316_Comp
Lab Sample ID: 570-131459-1

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: Outfall018_20230316_Comp
Lab Sample ID: 570-131459-1
Date Collected: 03/16/23 07:45
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	1.52	U	1.77	1.78	3.00	2.90	pCi/L	04/11/23 15:16	04/14/23 05:25	1
Gross Beta	**3.18**		0.797	0.858	4.00	0.918	pCi/L	04/11/23 15:16	04/14/23 05:25	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: Outfall018_20230316_Comp
Lab Sample ID: 570-131459-1
Date Collected: 03/16/23 07:45
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-7.52	U	13.5	13.6	20.0	16.3	pCi/L	03/22/23 16:26	03/30/23 10:48	1
Potassium-40	-56.3	U	141	142		196	pCi/L	03/22/23 16:26	03/30/23 10:48	1

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: Outfall018_20230316_Comp
Date Collected: 03/16/23 07:45
Date Received: 03/16/23 17:45

Lab Sample ID: 570-131459-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0771	U	0.159	0.159	1.00	0.284	pCi/L	03/27/23 09:46	04/19/23 15:09	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.8*		*30 - 110*	*03/27/23 09:46*	*04/19/23 15:09*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: Outfall018_20230316_Comp
Date Collected: 03/16/23 07:45
Date Received: 03/16/23 17:45

Lab Sample ID: 570-131459-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0731	U	0.390	0.390	1.00	0.756	pCi/L	03/27/23 10:15	04/17/23 12:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.8*		*30 - 110*	*03/27/23 10:15*	*04/17/23 12:07*	*1*
Y Carrier	*81.1*		*30 - 110*	*03/27/23 10:15*	*04/17/23 12:07*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: Outfall018_20230316_Comp
Date Collected: 03/16/23 07:45
Date Received: 03/16/23 17:45

Lab Sample ID: 570-131459-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.283	U	0.431	0.432	3.00	0.724	pCi/L	03/27/23 13:47	04/10/23 16:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*84.5*		*30 - 110*	*03/27/23 13:47*	*04/10/23 16:39*	*1*
Y Carrier	*68.8*		*30 - 110*	*03/27/23 13:47*	*04/10/23 16:39*	*1*

Client Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: Outfall018_20230316_Comp
Lab Sample ID: 570-131459-1
Date Collected: 03/16/23 07:45
Matrix: Water
Date Received: 03/16/23 17:45

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	81.5	U	150	150	500	259	pCi/L	04/12/23 10:37	04/13/23 07:03	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: Outfall018_20230316_Comp
Date Collected: 03/16/23 07:45
Date Received: 03/16/23 17:45

Lab Sample ID: 570-131459-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.370		0.196	0.198	1.00	0.149	pCi/L	03/30/23 16:34	04/03/23 20:59	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*83.9*		*30 - 110*	*03/30/23 16:34*	*04/03/23 20:59*	*1*

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-131459-1	Outfall018_20230316_Comp	85.8
LCS 160-605061/2-A	Lab Control Sample	96.6
MB 160-605061/1-A	Method Blank	95.6

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-131459-1	Outfall018_20230316_Comp	85.8	81.1
LCS 160-605065/2-A	Lab Control Sample	96.6	88.2
MB 160-605065/1-A	Method Blank	95.6	82.2

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-131459-1	Outfall018_20230316_Comp	84.5	68.8
LCS 160-605090/2-A	Lab Control Sample	83.8	75.9
MB 160-605090/1-A	Method Blank	83.0	70.3

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-131459-1	Outfall018_20230316_Comp	83.9
LCS 160-605729/2-A	Lab Control Sample	38.1
MB 160-605729/1-A	Method Blank	46.2

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-606931/1-A
Matrix: Water
Analysis Batch: 607421

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606931

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.01986	U	0.378	0.378	3.00	0.779	pCi/L	04/11/23 15:16	04/14/23 20:19	1
Gross Beta	1.580		0.602	0.622	4.00	0.817	pCi/L	04/11/23 15:16	04/14/23 20:19	1

Lab Sample ID: LCS 160-606931/2-A
Matrix: Water
Analysis Batch: 607345

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606931

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Gross Alpha			50.5	58.50		8.40	3.00	1.90	pCi/L	116	75 - 125		

Lab Sample ID: LCSB 160-606931/3-A
Matrix: Water
Analysis Batch: 607345

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606931

Analyte			Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Gross Beta			73.4	72.78		7.81	4.00	0.856	pCi/L	99	75 - 125		

Lab Sample ID: 570-131459-1 MS
Matrix: Water
Analysis Batch: 607424

Client Sample ID: Outfall018_20230316_Comp
Prep Type: Total/NA
Prep Batch: 606931

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Gross Alpha	1.52	U	50.5	31.32	F1	5.37	3.00	2.32	pCi/L	59	60 - 140		

Lab Sample ID: 570-131459-1 MSBT
Matrix: Water
Analysis Batch: 607424

Client Sample ID: Outfall018_20230316_Comp
Prep Type: Total/NA
Prep Batch: 606931

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Gross Beta	3.18		73.4	72.63		7.80	4.00	0.904	pCi/L	95	60 - 140		

Lab Sample ID: 570-131459-1 DU
Matrix: Water
Analysis Batch: 607424

Client Sample ID: Outfall018_20230316_Comp
Prep Type: Total/NA
Prep Batch: 606931

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Gross Alpha	1.52	U		1.897	U G	1.90	3.00	3.02	pCi/L			0.10	1
Gross Beta	3.18			3.916		0.931	4.00	0.916	pCi/L			0.41	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-604735/1-A
Matrix: Water
Analysis Batch: 605378

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604735

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	5.575	U	11.5	11.5	20.0	14.5	pCi/L	03/22/23 16:26	03/29/23 21:25	1
Potassium-40	-139.9	U	180	180		285	pCi/L	03/22/23 16:26	03/29/23 21:25	1

Lab Sample ID: LCS 160-604735/2-A
Matrix: Water
Analysis Batch: 605376

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604735

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	135500		16100		443	pCi/L	100	75 - 125
Cesium-137	40800	42170		5030	20.0	105	pCi/L	103	75 - 125
Cobalt-60	17800	18660		2230		54.8	pCi/L	105	75 - 125

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-605061/1-A
Matrix: Water
Analysis Batch: 608037

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605061

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02180	U	0.101	0.101	1.00	0.194	pCi/L	03/27/23 09:46	04/19/23 15:04	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.6*		*30 - 110*	*03/27/23 09:46*	*04/19/23 15:04*	*1*

Lab Sample ID: LCS 160-605061/2-A
Matrix: Water
Analysis Batch: 608037

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605061

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	10.17		1.15	1.00	0.150	pCi/L	90	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*96.6*		*30 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-605065/1-A
Matrix: Water
Analysis Batch: 607842

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605065

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.386		0.518	0.563	1.00	0.485	pCi/L	03/27/23 10:15	04/17/23 12:02	1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: MB 160-605065/1-A
Matrix: Water
Analysis Batch: 607842

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605065

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	95.6		30 - 110	03/27/23 10:15	04/17/23 12:02	1
Y Carrier	82.2		30 - 110	03/27/23 10:15	04/17/23 12:02	1

Lab Sample ID: LCS 160-605065/2-A
Matrix: Water
Analysis Batch: 607842

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605065

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.03	9.949		1.30	1.00	0.429	pCi/L	124	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	96.6		30 - 110
Y Carrier	88.2		30 - 110

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-605090/1-A
Matrix: Water
Analysis Batch: 606669

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605090

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.09802	U	0.194	0.194	3.00	0.333	pCi/L	03/27/23 13:47	04/10/23 16:12	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	83.0		30 - 110	03/27/23 13:47	04/10/23 16:12	1
Y Carrier	70.3		30 - 110	03/27/23 13:47	04/10/23 16:12	1

Lab Sample ID: LCS 160-605090/2-A
Matrix: Water
Analysis Batch: 606671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605090

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.34	7.184		0.800	3.00	0.317	pCi/L	98	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	83.8		30 - 110
Y Carrier	75.9		30 - 110

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-607088/1-A
Matrix: Water
Analysis Batch: 607810

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 607088

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	18.47	U	132	132	500	235	pCi/L	04/12/23 10:37	04/13/23 04:24	1

Lab Sample ID: LCS 160-607088/2-A
Matrix: Water
Analysis Batch: 607810

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607088

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2090	1964		338	500	239	pCi/L	94	75 - 125		

Lab Sample ID: 570-131459-1 MS
Matrix: Water
Analysis Batch: 607810

Client Sample ID: Outfall018_20230316_Comp
Prep Type: Total/NA
Prep Batch: 607088

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium	81.5	U	2010	1684		316	500	248	pCi/L	80	60 - 140		

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-605729/1-A
Matrix: Water
Analysis Batch: 605912

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605729

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.1686	U	0.206	0.207	1.00	0.300	pCi/L	03/30/23 16:34	04/03/23 20:56	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*46.2*		*30 - 110*	*03/30/23 16:34*	*04/03/23 20:56*	*1*

Lab Sample ID: LCS 160-605729/2-A
Matrix: Water
Analysis Batch: 605927

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605729

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	13.57		1.98	1.00	0.356	pCi/L	107	75 - 125		
Uranium-238			13.0	13.66		1.99	1.00	0.311	pCi/L	105	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*38.1*		*30 - 110*

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Rad

Prep Batch: 604735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	Fill_Geo-0	
MB 160-604735/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-604735/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 605061

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	PrecSep-21	
MB 160-605061/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-605061/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 605065

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	PrecSep_0	
MB 160-605065/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-605065/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Prep Batch: 605090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	PrecSep-7	
MB 160-605090/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-605090/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	

Prep Batch: 605729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	ExtChrom	
MB 160-605729/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-605729/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 606931

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	Evaporation	
MB 160-606931/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-606931/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-606931/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-131459-1 MS	Outfall018_20230316_Comp	Total/NA	Water	Evaporation	
570-131459-1 MSBT	Outfall018_20230316_Comp	Total/NA	Water	Evaporation	
570-131459-1 DU	Outfall018_20230316_Comp	Total/NA	Water	Evaporation	

Prep Batch: 607088

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131459-1	Outfall018_20230316_Comp	Total/NA	Water	LSC_Dist_Susp	
MB 160-607088/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-607088/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
570-131459-1 MS	Outfall018_20230316_Comp	Total/NA	Water	LSC_Dist_Susp	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Comp

Client Sample ID: Outfall018_20230316_Comp
Lab Sample ID: 570-131459-1
Date Collected: 03/16/23 07:45
Matrix: Water
Date Received: 03/16/23 17:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Evaporation			200.00 mL	1.0 g	606931	04/11/23 15:16	MST	EET SL
Total/NA	Analysis	900.0		1			607424	04/14/23 05:25	SCB	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	604735	03/22/23 16:26	SEH	EET SL
Total/NA	Analysis	901.1		1			605600	03/30/23 10:48	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	PrecSep-21			754.44 mL	1.0 g	605061	03/27/23 09:46	DJP	EET SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	608029	04/19/23 15:09	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			754.44 mL	1.0 g	605065	03/27/23 10:15	DJP	EET SL
Total/NA	Analysis	904.0		1			607841	04/17/23 12:07	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep-7			495.74 mL	1.0 g	605090	03/27/23 13:47	DJP	EET SL
Total/NA	Analysis	905		1			606668	04/10/23 16:39	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	LSC_Dist_Susp			99.20 mL	1.0 g	607088	04/12/23 10:37	SEH	EET SL
Total/NA	Analysis	906.0		1			607810	04/13/23 07:03	REV	EET SL
	Instrument ID: LSCAQUA									
Total/NA	Prep	ExtChrom			499.3 mL	1.0 mL	605729	03/30/23 16:34	CMM	EET SL
Total/NA	Analysis	A-01-R		1			606007	04/03/23 20:59	FLC	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	06-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-23
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131459-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy
EPA = US Environmental Protection Agency
None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Job ID: 570-131459-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131459-1	Outfall018_20230316_Comp	Water	03/16/23 07:45	03/16/23 17:45

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-131459 Chain of Custody

Loc: 570
131459

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 **ECI Project #57013187**	**Project Manager: Katherine Miller** 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Field Manager: Mark Dominick** 978.234.5033, 818.599.0702 (cell)
Sampler: Adrian Mobeka	

									ANALYSIS REQUIRED															
									R	R	R	R	R	R	R	R	R	R	R	C				
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl-, SO_4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	Turbidity, TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)				Comments
Outfall 018	Outfall018_20230316_Comp	3/16/2023 1745	WM	500 mL Poly	1	HNO_3	90	Yes	X										X					
			WM	1 L Glass Amber	2	None	110	No		X														
			WM	1L Poly	1	None	115	No			X													
			WM	500 mL Poly	2	None	120	No				X												
			WM	500 mL Poly	2	None	130	No					X											48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X										48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X								
			WM	1 L Glass Amber	2	None	170	No									X							
			WM	1 L Glass Amber	2	None	180	No										X						
			WM	1L Poly	1	None	185	No							X									

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
	3-16-2023	H:A		3/16/23 1205 EC
	3/16/23	1745 EC		3/16/23 17:45 EC

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

3.2/3.2 2.9/2.9 SCII

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:	ANALYSIS REQUIRED
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp	
Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 ECI Project #57013187		
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	
Sampler: Adrian Mobeka	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R: Total Dissolved Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	R: Cyanide (SM4500-CN-E / E335.2)	R: Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R: Total Dissolved Metals: Mercury (E245.1)	C	Comments
Outfall 018	Outfall018_20230316_Comp_F	3/16/2023 1045	WM	1L Poly	1	None	200	Yes	X					
			WM	borosilicate vials	2	None	320	No				X		Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230316_Comp	3/16/2023 1045	WM	500 mL Poly	1	NaOH	220	No		X				
			WM	2.5 Gal Cube	1	None	225	No			X			Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No						

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
M Dominick	3.16.2023 1205	H.A	[signature]	3/16/23 1205 EC
[signature]	3/16/23 1745	EC	[signature]	3/16/23 17:45 EC
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-211012.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131459-3
Address: 13715 Rider Trail North,	Due Date Requested: 4/18/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall - 018 Comp	Project #: 57013187			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	906.0/LSC_Dist_Susp Tritium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230316_Comp (570-131459-1)	3/16/23	07:45 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation. Ok to Preserve

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification
Unconfirmed
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ______ *Months*
Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:	
Relinquished by: [signature]	Date/Time: 03/17/23 7:51	Company: EA	Received by:	Date/Time:	Company:
Relinquished by: FEDEX	Date/Time:	Company:	Received by: Briana Shockey-Jung	Date/Time: 3/21/23 0930	Company: ETASTL
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131459-3

Login Number: 131459
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131459-3

Login Number: 131459
List Number: 3
Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis
List Creation: 03/21/23 02:24 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/7/2023 3:47:19 PM

JOB DESCRIPTION

Boeing -SSFL NPDES - Routine Outfall - 018 Grab

JOB NUMBER

570-131817-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

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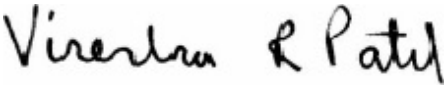
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-131817-1
Project/Site: Boeing -SSFL NPDES - Routine Outfall - 018 Gra

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc. Job ID: 570-131817-1
Project/Site: Boeing -SSFL NPDES - Routine Outfall - 018 Grab

Job ID: 570-131817-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131817-1

Comments
No additional comments.

Receipt
The samples were received on 3/20/2023 6:45 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.2º C.

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-313058. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 1664A: The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-313706.
Method: 1664.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131817-1
Project/Site: Boeing -SSFL NPDES - Routine Outfall - 018 Gra

Client Sample ID: Outfall018_20230320_Grab
Lab Sample ID: 570-131817-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
HEM (Oil & Grease)	1.2		0.97	0.50	mg/L	1		1664A	Total/NA
Specific Conductance	450		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA

Client Sample ID: TB-20230320
Lab Sample ID: 570-131817-2

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: Outfall018_20230320_Grab **Lab Sample ID: 570-131817-1**
Date Collected: 03/20/23 10:15 **Matrix: Water**
Date Received: 03/20/23 18:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/20/23 23:35	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/20/23 23:35	1
Trichloroethene	ND		0.50	0.17	ug/L			03/20/23 23:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*60 - 140*		*03/20/23 23:35*	*1*
4-Bromofluorobenzene (Surr)	*106*		*60 - 140*		*03/20/23 23:35*	*1*
Dibromofluoromethane (Surr)	*88*		*60 - 140*		*03/20/23 23:35*	*1*
Toluene-d8 (Surr)	*104*		*60 - 140*		*03/20/23 23:35*	*1*

Client Sample ID: TB-20230320 **Lab Sample ID: 570-131817-2**
Date Collected: 03/20/23 10:15 **Matrix: Water**
Date Received: 03/20/23 18:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/20/23 22:29	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/20/23 22:29	1
Trichloroethene	ND		0.50	0.17	ug/L			03/20/23 22:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*60 - 140*		*03/20/23 22:29*	*1*
4-Bromofluorobenzene (Surr)	*110*		*60 - 140*		*03/20/23 22:29*	*1*
Dibromofluoromethane (Surr)	*87*		*60 - 140*		*03/20/23 22:29*	*1*
Toluene-d8 (Surr)	*101*		*60 - 140*		*03/20/23 22:29*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-131817-1
Project/Site: Boeing -SSFL NPDES - Routine Outfall - 018 Gra

General Chemistry

Client Sample ID: Outfall018_20230320_Grab
Lab Sample ID: 570-131817-1
Date Collected: 03/20/23 10:15
Matrix: Water
Date Received: 03/20/23 18:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	**1.2**		0.97	0.50	mg/L		03/22/23 08:55	03/23/23 07:48	1
Specific Conductance (SM 2510B)	**450**		1.0	1.0	umhos/cm			03/22/23 19:57	1
Settleable Solids (SM 2540F)	ND		0.10	0.10	mL/L			03/21/23 14:15	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131817-1
Project/Site: Boeing -SSFL NPDES - Routine Outfall - 018 Gra

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-131817-1	Outfall018_20230320_Grab	101	106	88	104
570-131817-2	TB-20230320	102	110	87	101
LCS 570-313058/1003	Lab Control Sample	99	104	95	99
LCSD 570-313058/4	Lab Control Sample Dup	100	106	96	103
MB 570-313058/6	Method Blank	103	113	93	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-313058/6
Matrix: Water
Analysis Batch: 313058

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/20/23 15:10	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/20/23 15:10	1
Trichloroethene	ND		0.50	0.17	ug/L			03/20/23 15:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*60 - 140*		*03/20/23 15:10*	*1*
4-Bromofluorobenzene (Surr)	*113*		*60 - 140*		*03/20/23 15:10*	*1*
Dibromofluoromethane (Surr)	*93*		*60 - 140*		*03/20/23 15:10*	*1*
Toluene-d8 (Surr)	*101*		*60 - 140*		*03/20/23 15:10*	*1*

Lab Sample ID: LCS 570-313058/1003
Matrix: Water
Analysis Batch: 313058

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1-Dichloroethene			10.0	10.6		ug/L		106	50 - 150		
1,2-Dichloroethane			10.0	11.0		ug/L		110	70 - 130		
Trichloroethene			10.0	10.7		ug/L		107	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*60 - 140*
4-Bromofluorobenzene (Surr)	*104*		*60 - 140*
Dibromofluoromethane (Surr)	*95*		*60 - 140*
Toluene-d8 (Surr)	*99*		*60 - 140*

Lab Sample ID: LCSD 570-313058/4
Matrix: Water
Analysis Batch: 313058

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene			10.0	10.4		ug/L		104	50 - 150	2	32
1,2-Dichloroethane			10.0	11.5		ug/L		115	70 - 130	5	49
Trichloroethene			10.0	10.9		ug/L		109	65 - 135	2	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*60 - 140*
4-Bromofluorobenzene (Surr)	*106*		*60 - 140*
Dibromofluoromethane (Surr)	*96*		*60 - 140*
Toluene-d8 (Surr)	*103*		*60 - 140*

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-313706/1-A
Matrix: Water
Analysis Batch: 314039

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 313706

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		1.0	0.51	mg/L		03/22/23 08:55	03/23/23 07:48	1

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: LCS 570-313706/2-A
Matrix: Water
Analysis Batch: 314039

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 313706

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM (Oil & Grease)	40.0	39.3		mg/L		98	78 - 114

Lab Sample ID: LCSD 570-313706/3-A
Matrix: Water
Analysis Batch: 314039

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 313706

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM (Oil & Grease)	40.0	39.5		mg/L		99	78 - 114	1	18

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-313959/7
Matrix: Water
Analysis Batch: 313959

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/22/23 19:27	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131817-1
Project/Site: Boeing -SSFL NPDES - Routine Outfall - 018 Gra

GC/MS VOA

Analysis Batch: 313058

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131817-1	Outfall018_20230320_Grab	Total/NA	Water	624.1	
570-131817-2	TB-20230320	Total/NA	Water	624.1	
MB 570-313058/6	Method Blank	Total/NA	Water	624.1	
LCS 570-313058/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-313058/4	Lab Control Sample Dup	Total/NA	Water	624.1	

General Chemistry

Analysis Batch: 313462

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131817-1	Outfall018_20230320_Grab	Total/NA	Water	SM 2540F	

Prep Batch: 313706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131817-1	Outfall018_20230320_Grab	Total/NA	Water	1664A	
MB 570-313706/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-313706/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-313706/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 313959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131817-1	Outfall018_20230320_Grab	Total/NA	Water	SM 2510B	
MB 570-313959/7	Method Blank	Total/NA	Water	SM 2510B	

Analysis Batch: 314039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131817-1	Outfall018_20230320_Grab	Total/NA	Water	1664A	313706
MB 570-313706/1-A	Method Blank	Total/NA	Water	1664A	313706
LCS 570-313706/2-A	Lab Control Sample	Total/NA	Water	1664A	313706
LCSD 570-313706/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	313706

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-131817-1
Project/Site: Boeing -SSFL NPDES - Routine Outfall - 018 Gra

Client Sample ID: Outfall018_20230320_Grab
Lab Sample ID: 570-131817-1
Date Collected: 03/20/23 10:15
Matrix: Water
Date Received: 03/20/23 18:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	313058	03/20/23 23:35	A1W	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Prep	1664A			1027 mL	1000 mL	313706	03/22/23 08:55	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			314039	03/23/23 07:48	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									
Total/NA	Analysis	SM 2510B		1			313959	03/22/23 19:57	BDH9	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	313462	03/21/23 14:15	TXA8	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB-20230320
Lab Sample ID: 570-131817-2
Date Collected: 03/20/23 10:15
Matrix: Water
Date Received: 03/20/23 18:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	313058	03/20/23 22:29	A1W	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131817-1
Project/Site: Boeing -SSFL NPDES - Routine Outfall - 018 Gra

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131817-1
Project/Site: Boeing -SSFL NPDES - Routine Outfall - 018 Gra

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4

Protocol References:

1664A = EPA-821-98-002

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing -SSFL NPDES - Routine Outfall - 018
Grab

Job ID: 570-131817-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131817-1	Outfall018_20230320_Grab	Water	03/20/23 10:15	03/20/23 18:45
570-131817-2	TB-20230320	Water	03/20/23 10:15	03/20/23 18:45

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-131817 Chain of Custody

Loc: 570
131817

Client Name/Address:	Project:	Field Readings	Meter serial #
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Grab	Field Readings: (Include units) Time of Readings: ~~1015~~ 1115	
"Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 ECI Project # 57013187"		DO 10.88 mg/L pH 7.31 pH unit Temp 55.2 °C (F)	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)		
Sampler: michelle dallalah	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	Field readings QC Checked by: MMD Date/Time: 3/20/23 1300	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	ANALYSIS REQUIRED R: Oil & Grease (E1664A-HEM)	R: VOCs - only 1,1-DCE, 1,2-DCA, TCE (E624)	R: Settleable Solids (E160.5 (SM2540F))	R: Conductivity (SM2510B / E120.1)	Comments
Outfall 018	Outfall018_20230320_Grab	3/20/2023 1015	WM	1 L Glass Amber	2	HCl	15	No	X				
			WM	40 mL VOA	3	HCl	30	No		X			
			WM	1L Poly	1	None	70	No			X		
			WM	500 mL Poly	1	None	75	No				X	
Trip Blanks	TB-20230320	3/20/2023	WQ	40 mL VOA	3	HCl	30	No		X			

Legend: R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	3/20/23 1315	H&A		3/20/23 1315 EC
	3/20/23 1845 EC			3/20/23 18:45 EC

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

2.3/2.2 SC12

2019-2020 Rainy Season
Version 4

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131817-1

Login Number: 131817
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/8/2023 8:43:58 AM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall - 018 Comp

JOB NUMBER

570-131952-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization

Virendra R Patil

Generated
4/8/2023 8:43:58 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Qualifiers

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131952-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131952-1

Comments
No additional comments.

Receipt
The samples were received on 3/21/2023 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.1º C.

GC/MS Semi VOA
Method 625.1 SIM: The laboratory control sample (LCS) for preparation batch 570-314349 and analytical batch 570-314965 recovered outside acceptance limits for 1,2,4-Trichlorobenzene and Hexachlorobenzene. There was insufficient sample to perform a re-extraction or re-analysis; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: Outfall018_20230321_Comp_F (570-131952-3), Outfall018_20230321_Comp_F (570-131952-3[MS]) and Outfall018_20230321_Comp_F (570-131952-3[MSD]). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: Outfall018_20230321_Comp_F (570-131952-3), Outfall018_20230321_Comp_F (570-131952-3[MS]) and Outfall018_20230321_Comp_F (570-131952-3[MSD]). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 2540D: The sample duplicate (DUP) precision for analytical batch 570-314596 was outside control limits. Sample non-homogeneity is suspected.

Method Kelada 01: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 570-315871 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method SM 5210B: The following sample was diluted due to the nature of the sample matrix: Outfall018_20230321_Comp (570-131952-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-314171. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Method 608.3 PEST/PCB LL

Job ID: 570-131952-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-314349. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Method 625.1 Sim

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Client Sample ID: Outfall018_20230321_Comp
Lab Sample ID: 570-131952-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	15		1.0	0.36	mg/L	1		300.0	Total/NA
Nitrate as N	0.18		0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate	91		1.0	0.24	mg/L	1		300.0	Total/NA
Nitrate Nitrite as N	0.18		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Copper	1.8	J,DX	2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	0.16	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Selenium	0.70	J,DX	2.0	0.52	ug/L	1		200.8	Total Recoverable
Ammonia	0.069	J,DX	0.075	0.032	mg/L	1		350.1	Total/NA
Turbidity	0.20		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Dissolved Solids	290		10	8.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	2.1		1.0	0.83	mg/L	1		SM 2540D	Total/NA

Client Sample ID: Outfall018_20230321_Comp_F
Lab Sample ID: 570-131952-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	1.6	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: Outfall018_20230321_Comp
Date Collected: 03/21/23 10:25
Date Received: 03/21/23 17:10

Lab Sample ID: 570-131952-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		0.95	0.13	ug/L		03/24/23 05:15	03/27/23 19:49	1
2,4-Dinitrotoluene	ND		0.19	0.11	ug/L		03/24/23 05:15	03/27/23 19:49	1
Bis(2-ethylhexyl) phthalate	ND		4.7	3.4	ug/L		03/24/23 05:15	03/27/23 19:49	1
N-Nitrosodimethylamine	ND		0.19	0.18	ug/L		03/24/23 05:15	03/27/23 19:49	1
Pentachlorophenol	ND		0.95	0.80	ug/L		03/24/23 05:15	03/27/23 19:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*53*		*31 - 120*	*03/24/23 05:15*	*03/27/23 19:49*	*1*
Phenol-d6 (Surr)	*25*		*10 - 120*	*03/24/23 05:15*	*03/27/23 19:49*	*1*
p-Terphenyl-d14 (Surr)	*91*		*45 - 120*	*03/24/23 05:15*	*03/27/23 19:49*	*1*
2,4,6-Tribromophenol	*91*		*28 - 127*	*03/24/23 05:15*	*03/27/23 19:49*	*1*
2-Fluorophenol	*31*		*17 - 120*	*03/24/23 05:15*	*03/27/23 19:49*	*1*
Nitrobenzene-d5	*59*		*27 - 120*	*03/24/23 05:15*	*03/27/23 19:49*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 608.3 - Organochlorine Pesticides in Water

Client Sample ID: Outfall018_20230321_Comp
Lab Sample ID: 570-131952-1
Date Collected: 03/21/23 10:25
Matrix: Water
Date Received: 03/21/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		03/23/23 12:38	03/26/23 14:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*54*		*20 - 139*	*03/23/23 12:38*	*03/26/23 14:15*	*1*
DCB Decachlorobiphenyl (Surr)	*54*		*20 - 154*	*03/23/23 12:38*	*03/26/23 14:15*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: Outfall018_20230321_Comp
Lab Sample ID: 570-131952-1
Date Collected: 03/21/23 10:25
Matrix: Water
Date Received: 03/21/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**15**		1.0	0.36	mg/L			03/22/23 08:25	1
Nitrite as N	ND		0.10	0.043	mg/L			03/22/23 08:25	1
Nitrate as N	**0.18**		0.10	0.020	mg/L			03/22/23 08:25	1
Sulfate	**91**		1.0	0.24	mg/L			03/22/23 08:25	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: Outfall018_20230321_Comp
Lab Sample ID: 570-131952-1
Date Collected: 03/21/23 10:25
Matrix: Water
Date Received: 03/21/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/22/23 19:18	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: Outfall018_20230321_Comp
Lab Sample ID: 570-131952-1
Date Collected: 03/21/23 10:25
Matrix: Water
Date Received: 03/21/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	0.18		0.10	0.020	mg/L			03/24/23 10:42	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: Outfall018_20230321_Comp
Lab Sample ID: 570-131952-1
Date Collected: 03/21/23 10:25
Matrix: Water
Date Received: 03/21/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		03/22/23 10:04	03/22/23 13:10	1
Copper	**1.8**	**J,DX**	2.0	0.32	ug/L		03/22/23 10:04	03/22/23 13:10	1
Lead	**0.16**	**J,DX**	1.0	0.12	ug/L		03/22/23 10:04	03/22/23 13:10	1
Selenium	**0.70**	**J,DX**	2.0	0.52	ug/L		03/22/23 10:04	03/22/23 13:10	1
Zinc	ND		20	2.8	ug/L		03/22/23 10:04	03/22/23 13:10	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: Outfall018_20230321_Comp_F
Lab Sample ID: 570-131952-3
Date Collected: 03/21/23 10:25
Matrix: Water
Date Received: 03/21/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			03/22/23 13:41	1
Copper	**1.6**	**J,DX BU**	2.0	0.32	ug/L			03/22/23 13:41	1
Lead	ND	BU	1.0	0.12	ug/L			03/22/23 13:41	1
Selenium	ND	BU	2.0	0.52	ug/L			03/22/23 13:41	1
Zinc	ND	BU	20	2.8	ug/L			03/22/23 13:41	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: Outfall018_20230321_Comp
Lab Sample ID: 570-131952-1
Date Collected: 03/21/23 10:25
Matrix: Water
Date Received: 03/21/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/22/23 18:00	03/23/23 16:55	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: Outfall018_20230321_Comp_F
Lab Sample ID: 570-131952-3
Date Collected: 03/21/23 10:25
Matrix: Water
Date Received: 03/21/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	BU	0.20	0.12	ug/L		03/23/23 06:08	03/23/23 18:48	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

General Chemistry

Client Sample ID: Outfall018_20230321_Comp
Date Collected: 03/21/23 10:25
Date Received: 03/21/23 17:10

Lab Sample ID: 570-131952-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	**0.069**	**J,DX**	0.075	0.032	mg/L		03/27/23 14:02	03/27/23 16:28	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			03/29/23 15:54	1
Turbidity (SM 2130B)	**0.20**		0.05	0.05	NTU			03/22/23 14:41	1
Total Dissolved Solids (SM 2540C)	**290**		10	8.7	mg/L			03/23/23 17:37	1
Total Suspended Solids (SM 2540D)	**2.1**		1.0	0.83	mg/L			03/24/23 16:00	1
Biochemical Oxygen Demand (SM 5210B)	ND		2.0	1.0	mg/L		03/22/23 16:12	03/22/23 17:56	1
MBAS (SM 5540C)	ND		0.20	0.050	mg/L		03/22/23 15:00	03/22/23 17:35	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Job ID: 570-131952-1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	PHL6	TPHd14	TBP	2FP	NBZ
Lab Sample ID	Client Sample ID	(31-120)	(10-120)	(45-120)	(28-127)	(17-120)	(27-120)
570-131952-1	Outfall018_20230321_Comp	53	25	91	91	31	59
LCS 570-314349/2-A	Lab Control Sample	71	37	99	95	47	67
LCSD 570-314349/3-A	Lab Control Sample Dup	69	35	101	90	47	66
MB 570-314349/1-A	Method Blank	46	25	81	66	35	57

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX1	DCB2
Lab Sample ID	Client Sample ID	(20-139)	(20-154)
570-131952-1	Outfall018_20230321_Comp	54	54

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl (Surr)

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX1	DCB1
Lab Sample ID	Client Sample ID	(20-139)	(20-154)
LCS 570-314171/2-A	Lab Control Sample	54	57
LCSD 570-314171/3-A	Lab Control Sample Dup	57	68

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl (Surr)

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX2	DCB1
Lab Sample ID	Client Sample ID	(20-139)	(20-154)
MB 570-314171/1-A	Method Blank	88	101

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-314349/1-A
Matrix: Water
Analysis Batch: 314965

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 314349

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		03/24/23 05:15	03/27/23 14:38	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		03/24/23 05:15	03/27/23 14:38	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		03/24/23 05:15	03/27/23 14:38	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		03/24/23 05:15	03/27/23 14:38	1
Pentachlorophenol	ND		1.0	0.84	ug/L		03/24/23 05:15	03/27/23 14:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*46*		*31 - 120*	*03/24/23 05:15*	*03/27/23 14:38*	*1*
Phenol-d6 (Surr)	*25*		*10 - 120*	*03/24/23 05:15*	*03/27/23 14:38*	*1*
p-Terphenyl-d14 (Surr)	*81*		*45 - 120*	*03/24/23 05:15*	*03/27/23 14:38*	*1*
2,4,6-Tribromophenol	*66*		*28 - 127*	*03/24/23 05:15*	*03/27/23 14:38*	*1*
2-Fluorophenol	*35*		*17 - 120*	*03/24/23 05:15*	*03/27/23 14:38*	*1*
Nitrobenzene-d5	*57*		*27 - 120*	*03/24/23 05:15*	*03/27/23 14:38*	*1*

Lab Sample ID: LCS 570-314349/2-A
Matrix: Water
Analysis Batch: 314965

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 314349

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4,6-Trichlorophenol	20.0	17.1		ug/L		85	52 - 129
2,4-Dinitrotoluene	20.0	22.6		ug/L		113	48 - 127
Bis(2-ethylhexyl) phthalate	20.0	24.4		ug/L		122	29 - 137
N-Nitrosodimethylamine	20.0	9.98		ug/L		50	20 - 120
Pentachlorophenol	20.0	10.3		ug/L		51	38 - 152

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*71*		*31 - 120*
Phenol-d6 (Surr)	*37*		*10 - 120*
p-Terphenyl-d14 (Surr)	*99*		*45 - 120*
2,4,6-Tribromophenol	*95*		*28 - 127*
2-Fluorophenol	*47*		*17 - 120*
Nitrobenzene-d5	*67*		*27 - 120*

Lab Sample ID: LCSD 570-314349/3-A
Matrix: Water
Analysis Batch: 314965

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 314349

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4,6-Trichlorophenol	20.0	16.9		ug/L		84	52 - 129	1	35
2,4-Dinitrotoluene	20.0	21.2		ug/L		106	48 - 127	6	25
Bis(2-ethylhexyl) phthalate	20.0	23.0		ug/L		115	29 - 137	6	50
N-Nitrosodimethylamine	20.0	11.5		ug/L		57	20 - 120	14	21
Pentachlorophenol	20.0	9.33		ug/L		47	38 - 152	10	52

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*69*		*31 - 120*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-314349/3-A
Matrix: Water
Analysis Batch: 314965

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 314349

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Phenol-d6 (Surr)	*35*		*10 - 120*
p-Terphenyl-d14 (Surr)	*101*		*45 - 120*
2,4,6-Tribromophenol	*90*		*28 - 127*
2-Fluorophenol	*47*		*17 - 120*
Nitrobenzene-d5	*66*		*27 - 120*

Method: 608.3 - Organochlorine Pesticides in Water

Lab Sample ID: MB 570-314171/1-A
Matrix: Water
Analysis Batch: 314768

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 314171

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		03/23/23 12:38	03/26/23 01:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*88*		*20 - 139*	*03/23/23 12:38*	*03/26/23 01:29*	*1*
DCB Decachlorobiphenyl (Surr)	*101*		*20 - 154*	*03/23/23 12:38*	*03/26/23 01:29*	*1*

Lab Sample ID: LCS 570-314171/2-A
Matrix: Water
Analysis Batch: 314256

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 314171

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
alpha-BHC			0.0333	0.0196		ug/L		59	37 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*54*		*20 - 139*
DCB Decachlorobiphenyl (Surr)	*57*		*20 - 154*

Lab Sample ID: LCSD 570-314171/3-A
Matrix: Water
Analysis Batch: 314256

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 314171

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
alpha-BHC			0.0333	0.0210		ug/L		63	37 - 140	7	36

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*57*		*20 - 139*
DCB Decachlorobiphenyl (Surr)	*68*		*20 - 154*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-313627/5
Matrix: Water
Analysis Batch: 313627

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			03/22/23 03:56	1
Nitrate as N	ND		0.10	0.020	mg/L			03/22/23 03:56	1

Lab Sample ID: LCS 570-313627/6
Matrix: Water
Analysis Batch: 313627

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.53		mg/L		101	90 - 110
Nitrate as N	5.00	5.01		mg/L		100	90 - 110

Lab Sample ID: LCSD 570-313627/7
Matrix: Water
Analysis Batch: 313627

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.53		mg/L		101	90 - 110	0	15
Nitrate as N	5.00	5.03		mg/L		101	90 - 110	0	15

Lab Sample ID: MB 570-313628/5
Matrix: Water
Analysis Batch: 313628

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			03/22/23 03:56	1
Sulfate	ND		1.0	0.24	mg/L			03/22/23 03:56	1

Lab Sample ID: LCS 570-313628/6
Matrix: Water
Analysis Batch: 313628

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	49.2		mg/L		98	90 - 110
Sulfate	50.0	49.3		mg/L		99	90 - 110

Lab Sample ID: LCSD 570-313628/7
Matrix: Water
Analysis Batch: 313628

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	49.3		mg/L		99	90 - 110	0	15
Sulfate	50.0	49.3		mg/L		99	90 - 110	0	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-313743/7
Matrix: Water
Analysis Batch: 313743

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/22/23 13:02	1

Lab Sample ID: LCS 570-313743/8
Matrix: Water
Analysis Batch: 313743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	25.2		ug/L		101	85 - 115

Lab Sample ID: LCSD 570-313743/9
Matrix: Water
Analysis Batch: 313743

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	24.4		ug/L		97	85 - 115	3	15

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-313733/1-A
Matrix: Water
Analysis Batch: 313834

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 313733

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		03/22/23 10:04	03/22/23 13:03	1
Copper	ND		2.0	0.32	ug/L		03/22/23 10:04	03/22/23 13:03	1
Lead	ND		1.0	0.12	ug/L		03/22/23 10:04	03/22/23 13:03	1
Selenium	ND		2.0	0.52	ug/L		03/22/23 10:04	03/22/23 13:03	1
Zinc	ND		20	2.8	ug/L		03/22/23 10:04	03/22/23 13:03	1

Lab Sample ID: LCS 570-313733/2-A
Matrix: Water
Analysis Batch: 313834

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 313733

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	78.5		ug/L		98	85 - 115
Copper	80.0	75.2		ug/L		94	85 - 115
Lead	80.0	73.6		ug/L		92	85 - 115
Selenium	80.0	77.6		ug/L		97	85 - 115
Zinc	80.0	76.3		ug/L		95	85 - 115

Lab Sample ID: LCSD 570-313733/3-A
Matrix: Water
Analysis Batch: 313834

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 313733

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	79.0		ug/L		99	85 - 115	1	20
Copper	80.0	78.0		ug/L		97	85 - 115	4	20
Lead	80.0	76.2		ug/L		95	85 - 115	3	20
Selenium	80.0	77.0		ug/L		96	85 - 115	1	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-313733/3-A
Matrix: Water
Analysis Batch: 313834

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 313733

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Zinc			80.0	76.0		ug/L		95	85 - 115	0	20

Lab Sample ID: 570-131952-1 MS
Matrix: Water
Analysis Batch: 313834

Client Sample ID: Outfall018_20230321_Comp
Prep Type: Total Recoverable
Prep Batch: 313733

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND		80.0	75.2		ug/L		94	80 - 120
Copper	1.8	J,DX	80.0	75.9		ug/L		93	80 - 120
Lead	0.16	J,DX	80.0	72.6		ug/L		91	80 - 120
Selenium	0.70	J,DX	80.0	72.5		ug/L		90	80 - 120
Zinc	ND		80.0	72.5		ug/L		91	80 - 120

Lab Sample ID: 570-131952-1 MSD
Matrix: Water
Analysis Batch: 313834

Client Sample ID: Outfall018_20230321_Comp
Prep Type: Total Recoverable
Prep Batch: 313733

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND		80.0	75.6		ug/L		94	80 - 120	1	20
Copper	1.8	J,DX	80.0	76.3		ug/L		93	80 - 120	0	20
Lead	0.16	J,DX	80.0	72.8		ug/L		91	80 - 120	0	20
Selenium	0.70	J,DX	80.0	76.3		ug/L		94	80 - 120	5	20
Zinc	ND		80.0	74.9		ug/L		94	80 - 120	3	20

Lab Sample ID: MB 570-313762/1-A
Matrix: Water
Analysis Batch: 313835

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L			03/22/23 13:05	1
Copper	ND		2.0	0.32	ug/L			03/22/23 13:05	1
Lead	ND		1.0	0.12	ug/L			03/22/23 13:05	1
Selenium	ND		2.0	0.52	ug/L			03/22/23 13:05	1
Zinc	ND		20	2.8	ug/L			03/22/23 13:05	1

Lab Sample ID: LCS 570-313762/2-A
Matrix: Water
Analysis Batch: 313835

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium			80.0	81.1		ug/L		101	85 - 115
Copper			80.0	77.1		ug/L		96	85 - 115
Lead			80.0	77.2		ug/L		96	85 - 115
Selenium			80.0	77.1		ug/L		96	85 - 115
Zinc			80.0	79.2		ug/L		99	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-313762/3-A
Matrix: Water
Analysis Batch: 313835

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium			80.0	81.7		ug/L		102	85 - 115	1	20
Copper			80.0	78.9		ug/L		99	85 - 115	2	20
Lead			80.0	77.3		ug/L		97	85 - 115	0	20
Selenium			80.0	76.9		ug/L		96	85 - 115	0	20
Zinc			80.0	78.8		ug/L		98	85 - 115	1	20

Lab Sample ID: 570-131952-3 MS
Matrix: Water
Analysis Batch: 313835

Client Sample ID: Outfall018_20230321_Comp_F
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND	BU	80.0	68.6	BU	ug/L		86	80 - 120
Copper	1.6	J,DX BU	80.0	70.4	BU	ug/L		86	80 - 120
Lead	ND	BU	80.0	67.0	BU	ug/L		84	80 - 120
Selenium	ND	BU	80.0	69.5	BU	ug/L		87	80 - 120
Zinc	ND	BU	80.0	68.4	BU	ug/L		86	80 - 120

Lab Sample ID: 570-131952-3 MSD
Matrix: Water
Analysis Batch: 313835

Client Sample ID: Outfall018_20230321_Comp_F
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND	BU	80.0	68.0	BU	ug/L		85	80 - 120	1	20
Copper	1.6	J,DX BU	80.0	70.1	BU	ug/L		86	80 - 120	0	20
Lead	ND	BU	80.0	66.2	BU	ug/L		83	80 - 120	1	20
Selenium	ND	BU	80.0	70.0	BU	ug/L		88	80 - 120	1	20
Zinc	ND	BU	80.0	66.9	BU	ug/L		84	80 - 120	2	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-314016/1-A
Matrix: Water
Analysis Batch: 314215

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 314016

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/22/23 18:00	03/23/23 14:10	1

Lab Sample ID: LCS 570-314016/2-A
Matrix: Water
Analysis Batch: 314215

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 314016

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury			8.00	7.98		ug/L		100	85 - 115

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: LCSD 570-314016/3-A
Matrix: Water
Analysis Batch: 314215

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 314016

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			8.00	8.04		ug/L		100	85 - 115	1	10

Lab Sample ID: 570-131952-1 MS
Matrix: Water
Analysis Batch: 314463

Client Sample ID: Outfall018_20230321_Comp
Prep Type: Total/NA
Prep Batch: 314016

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	ND		8.00	7.97		ug/L		100	85 - 115		

Lab Sample ID: 570-131952-1 MSD
Matrix: Water
Analysis Batch: 314463

Client Sample ID: Outfall018_20230321_Comp
Prep Type: Total/NA
Prep Batch: 314016

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		8.00	8.03		ug/L		100	85 - 115	1	10

Lab Sample ID: MB 570-314019/1-B
Matrix: Water
Analysis Batch: 314463

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 314025

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/23/23 06:08	03/23/23 18:27	1

Lab Sample ID: LCS 570-314019/2-B
Matrix: Water
Analysis Batch: 314463

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 314025

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			8.00	7.63		ug/L		95	85 - 115		

Lab Sample ID: LCSD 570-314019/3-B
Matrix: Water
Analysis Batch: 314463

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 314025

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			8.00	7.59		ug/L		95	85 - 115	0	10

Lab Sample ID: 570-131952-3 MS
Matrix: Water
Analysis Batch: 314463

Client Sample ID: Outfall018_20230321_Comp_F
Prep Type: Dissolved
Prep Batch: 314025

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	ND	BU	8.00	7.40	BU	ug/L		92	85 - 115		

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: 570-131952-3 MSD
Matrix: Water
Analysis Batch: 314463

Client Sample ID: Outfall018_20230321_Comp_F
Prep Type: Dissolved
Prep Batch: 314025

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND	BU	8.00	7.57	BU	ug/L		95	85 - 115	2	10

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-315112/5-A
Matrix: Water
Analysis Batch: 315123

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 315112

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		03/27/23 14:02	03/27/23 15:47	1

Lab Sample ID: LCS 570-315112/6-A
Matrix: Water
Analysis Batch: 315123

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315112

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	0.500	0.494		mg/L		99	90 - 110

Lab Sample ID: LCSD 570-315112/7-A
Matrix: Water
Analysis Batch: 315123

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 315112

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	0.500	0.500		mg/L		100	90 - 110	1	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-315871/11
Matrix: Water
Analysis Batch: 315871

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			03/29/23 13:56	1

Lab Sample ID: LCS 570-315871/12
Matrix: Water
Analysis Batch: 315871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	249		ug/L		100	90 - 110

Lab Sample ID: LCSD 570-315871/13
Matrix: Water
Analysis Batch: 315871

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	250	249		ug/L		100	90 - 110	0	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate (Continued)

Lab Sample ID: MRL 570-315871/10
Matrix: Water
Analysis Batch: 315871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	4.82	J,DX	ug/L		96	50 - 150

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-313839/1
Matrix: Water
Analysis Batch: 313839

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	1000	1000		NTU		100.6	99.0 - 101.0

Lab Sample ID: LCSSRM 570-313839/2
Matrix: Water
Analysis Batch: 313839

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	10.0	10		NTU		101.0	99.0 - 101.0

Lab Sample ID: LCSSRM 570-313839/3
Matrix: Water
Analysis Batch: 313839

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-314263/1
Matrix: Water
Analysis Batch: 314263

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			03/23/23 17:37	1

Lab Sample ID: LCS 570-314263/2
Matrix: Water
Analysis Batch: 314263

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	984		mg/L		98	84 - 108

Lab Sample ID: LCSD 570-314263/3
Matrix: Water
Analysis Batch: 314263

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1040		mg/L		104	84 - 108	5	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-314596/1
Matrix: Water
Analysis Batch: 314596

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			03/24/23 15:59	1

Lab Sample ID: LCS 570-314596/2
Matrix: Water
Analysis Batch: 314596

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	94.0		mg/L		94	77 - 116

Lab Sample ID: LCSD 570-314596/3
Matrix: Water
Analysis Batch: 314596

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	96.0		mg/L		96	77 - 116	2	10

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 570-313750/1-A
Matrix: Water
Analysis Batch: 315092

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 313750

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L		03/22/23 10:21	03/22/23 10:23	1

Lab Sample ID: LCS 570-313750/2-A
Matrix: Water
Analysis Batch: 315092

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 313750

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	199	202		mg/L		102	84.6 - 115.4

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-313848/5-A
Matrix: Water
Analysis Batch: 314090

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 313848

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.20	0.050	mg/L		03/22/23 15:00	03/22/23 17:28	1

Lab Sample ID: LCS 570-313848/6-A
Matrix: Water
Analysis Batch: 314090

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 313848

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
MBAS	0.500	0.522		mg/L		104	83 - 122

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: SM 5540C - Methylene Blue Active Substances (MBAS) (Continued)

Lab Sample ID: LCSD 570-313848/7-A
Matrix: Water
Analysis Batch: 314090

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 313848

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS			0.500	0.524		mg/L		105	83 - 122	0	10

GC/MS Semi VOA

Prep Batch: 314349

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	625	
MB 570-314349/1-A	Method Blank	Total/NA	Water	625	
LCS 570-314349/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-314349/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 314965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	625.1 SIM	314349
MB 570-314349/1-A	Method Blank	Total/NA	Water	625.1 SIM	314349
LCS 570-314349/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	314349
LCSD 570-314349/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	314349

GC Semi VOA

Prep Batch: 314171

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	608	
MB 570-314171/1-A	Method Blank	Total/NA	Water	608	
LCS 570-314171/2-A	Lab Control Sample	Total/NA	Water	608	
LCSD 570-314171/3-A	Lab Control Sample Dup	Total/NA	Water	608	

Analysis Batch: 314256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-314171/2-A	Lab Control Sample	Total/NA	Water	608.3	314171
LCSD 570-314171/3-A	Lab Control Sample Dup	Total/NA	Water	608.3	314171

Analysis Batch: 314768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	608.3	314171
MB 570-314171/1-A	Method Blank	Total/NA	Water	608.3	314171

HPLC/IC

Analysis Batch: 313627

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	300.0	
MB 570-313627/5	Method Blank	Total/NA	Water	300.0	
LCS 570-313627/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-313627/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 313628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	300.0	
MB 570-313628/5	Method Blank	Total/NA	Water	300.0	
LCS 570-313628/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-313628/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 313743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	314.0	
MB 570-313743/7	Method Blank	Total/NA	Water	314.0	

HPLC/IC (Continued)

Analysis Batch: 313743 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-313743/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-313743/9	Lab Control Sample Dup	Total/NA	Water	314.0	

Analysis Batch: 314475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	NO2NO3 Calc	

Metals

Prep Batch: 313733

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total Recoverable	Water	200.8	
MB 570-313733/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-313733/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-313733/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-131952-1 MS	Outfall018_20230321_Comp	Total Recoverable	Water	200.8	
570-131952-1 MSD	Outfall018_20230321_Comp	Total Recoverable	Water	200.8	

Filtration Batch: 313762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-3	Outfall018_20230321_Comp_F	Dissolved	Water	Filtration	
MB 570-313762/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-313762/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-313762/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-131952-3 MS	Outfall018_20230321_Comp_F	Dissolved	Water	Filtration	
570-131952-3 MSD	Outfall018_20230321_Comp_F	Dissolved	Water	Filtration	

Analysis Batch: 313834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total Recoverable	Water	200.8	313733
MB 570-313733/1-A	Method Blank	Total Recoverable	Water	200.8	313733
LCS 570-313733/2-A	Lab Control Sample	Total Recoverable	Water	200.8	313733
LCSD 570-313733/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	313733
570-131952-1 MS	Outfall018_20230321_Comp	Total Recoverable	Water	200.8	313733
570-131952-1 MSD	Outfall018_20230321_Comp	Total Recoverable	Water	200.8	313733

Analysis Batch: 313835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-3	Outfall018_20230321_Comp_F	Dissolved	Water	200.8	313762
MB 570-313762/1-A	Method Blank	Dissolved	Water	200.8	313762
LCS 570-313762/2-A	Lab Control Sample	Dissolved	Water	200.8	313762
LCSD 570-313762/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	313762
570-131952-3 MS	Outfall018_20230321_Comp_F	Dissolved	Water	200.8	313762
570-131952-3 MSD	Outfall018_20230321_Comp_F	Dissolved	Water	200.8	313762

Prep Batch: 314016

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	245.1	
MB 570-314016/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-314016/2-A	Lab Control Sample	Total/NA	Water	245.1	

Metals (Continued)

Prep Batch: 314016 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 570-314016/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
570-131952-1 MS	Outfall018_20230321_Comp	Total/NA	Water	245.1	
570-131952-1 MSD	Outfall018_20230321_Comp	Total/NA	Water	245.1	

Filtration Batch: 314019

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-3	Outfall018_20230321_Comp_F	Dissolved	Water	Filtration	
MB 570-314019/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-314019/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-314019/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-131952-3 MS	Outfall018_20230321_Comp_F	Dissolved	Water	Filtration	
570-131952-3 MSD	Outfall018_20230321_Comp_F	Dissolved	Water	Filtration	

Prep Batch: 314025

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-3	Outfall018_20230321_Comp_F	Dissolved	Water	245.1	314019
MB 570-314019/1-B	Method Blank	Dissolved	Water	245.1	314019
LCS 570-314019/2-B	Lab Control Sample	Dissolved	Water	245.1	314019
LCSD 570-314019/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	314019
570-131952-3 MS	Outfall018_20230321_Comp_F	Dissolved	Water	245.1	314019
570-131952-3 MSD	Outfall018_20230321_Comp_F	Dissolved	Water	245.1	314019

Analysis Batch: 314215

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-314016/1-A	Method Blank	Total/NA	Water	245.1	314016
LCS 570-314016/2-A	Lab Control Sample	Total/NA	Water	245.1	314016
LCSD 570-314016/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	314016

Analysis Batch: 314463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	245.1	314016
570-131952-3	Outfall018_20230321_Comp_F	Dissolved	Water	245.1	314025
MB 570-314019/1-B	Method Blank	Dissolved	Water	245.1	314025
LCS 570-314019/2-B	Lab Control Sample	Dissolved	Water	245.1	314025
LCSD 570-314019/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	314025
570-131952-1 MS	Outfall018_20230321_Comp	Total/NA	Water	245.1	314016
570-131952-1 MSD	Outfall018_20230321_Comp	Total/NA	Water	245.1	314016
570-131952-3 MS	Outfall018_20230321_Comp_F	Dissolved	Water	245.1	314025
570-131952-3 MSD	Outfall018_20230321_Comp_F	Dissolved	Water	245.1	314025

General Chemistry

Prep Batch: 313750

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	BOD Prep	
USB 570-313750/1-A	Method Blank	Total/NA	Water	BOD Prep	
LCS 570-313750/2-A	Lab Control Sample	Total/NA	Water	BOD Prep	

General Chemistry

Analysis Batch: 313839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	SM 2130B	
LCSSRM 570-313839/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-313839/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-313839/3	Lab Control Sample	Total/NA	Water	SM 2130B	

Prep Batch: 313848

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	SM 5540C	
MB 570-313848/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-313848/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-313848/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	

Analysis Batch: 314090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	SM 5540C	313848
MB 570-313848/5-A	Method Blank	Total/NA	Water	SM 5540C	313848
LCS 570-313848/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	313848
LCSD 570-313848/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	313848

Analysis Batch: 314263

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	SM 2540C	
MB 570-314263/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-314263/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-314263/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 314596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	SM 2540D	
MB 570-314596/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-314596/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-314596/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 315092

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	SM 5210B	313750
USB 570-313750/1-A	Method Blank	Total/NA	Water	SM 5210B	313750
LCS 570-313750/2-A	Lab Control Sample	Total/NA	Water	SM 5210B	313750

Prep Batch: 315112

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	Distill/Ammonia	
MB 570-315112/5-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-315112/6-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-315112/7-A	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 315123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	350.1	315112
MB 570-315112/5-A	Method Blank	Total/NA	Water	350.1	315112

General Chemistry (Continued)

Analysis Batch: 315123 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-315112/6-A	Lab Control Sample	Total/NA	Water	350.1	315112
LCSD 570-315112/7-A	Lab Control Sample Dup	Total/NA	Water	350.1	315112

Analysis Batch: 315871

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	Kelada 01	
MB 570-315871/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-315871/12	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-315871/13	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-315871/10	Lab Control Sample	Total/NA	Water	Kelada 01	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Comp

Client Sample ID: Outfall018_20230321_Comp
Lab Sample ID: 570-131952-1
Date Collected: 03/21/23 10:25
Matrix: Water
Date Received: 03/21/23 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			1053.6 mL	2 mL	314349	03/24/23 05:15	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	314965	03/27/23 19:49	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Prep	608			1500 mL	1 mL	314171	03/23/23 12:38	H1SH	EET CAL 4
Total/NA	Analysis	608.3		1	1 mL	1 mL	314768	03/26/23 14:15	N5Y3	EET CAL 4
	Instrument ID: GC52A									
Total/NA	Analysis	300.0		1	4 mL	4 mL	313627	03/22/23 08:25	PS	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	300.0		1	4 mL	4 mL	313628	03/22/23 08:25	PS	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	314.0		1	4 mL	4 mL	313743	03/22/23 19:18	PS	EET CAL 4
	Instrument ID: IC8									
Total/NA	Analysis	NO2NO3 Calc		1			314475	03/24/23 10:42	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total Recoverable	Prep	200.8			50 mL	50 mL	313733	03/22/23 10:04	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			313834	03/22/23 13:10	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Prep	245.1			25 mL	50 mL	314016	03/22/23 18:00	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			314463	03/23/23 16:55	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	315112	03/27/23 14:02	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	315123	03/27/23 16:28	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	315871	03/29/23 15:54	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			313839	03/22/23 14:41	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	314263	03/23/23 17:37	ZL7L	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	314596	03/24/23 16:00	UWCT	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Prep	BOD Prep					313750	03/22/23 16:12	U7UR	EET CAL 4
Total/NA	Analysis	SM 5210B		1	300 mL	300 mL	315092	03/22/23 17:56	TN8Z	EET CAL 4
	Instrument ID: BOD3									
Total/NA	Prep	SM 5540C			100 mL	100 mL	313848	03/22/23 15:00	TXA8	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	314090	03/22/23 17:35	TXA8	EET CAL 4
	Instrument ID: UV8									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Comp

Client Sample ID: Outfall018_20230321_Comp_F
Lab Sample ID: 570-131952-3

Date Collected: 03/21/23 10:25
Matrix: Water
Date Received: 03/21/23 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	313762	03/22/23 10:51	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			313835	03/22/23 13:41	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Dissolved	Filtration	Filtration			25 mL	25 mL	314019	03/23/23 05:55	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	314025	03/23/23 06:08	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			314463	03/23/23 18:48	C0YH	EET CAL 4
	Instrument ID: HG8									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method	Method Description	Protocol	Laboratory
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
608.3	Organochlorine Pesticides in Water	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 5210B	BOD, 5-Day	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
608	Liquid-Liquid Extraction (Separatory Funnel)	EPA	EET CAL 4
625	Liquid-Liquid Extraction	EPA	EET CAL 4
BOD Prep	Preparation, BOD	SM	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Job ID: 570-131952-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131952-1	Outfall018_20230321_Comp	Water	03/21/23 10:25	03/21/23 17:10
570-131952-3	Outfall018_20230321_Comp_F	Water	03/21/23 10:25	03/21/23 17:10

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-131952 Chain of Custody

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp
"Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 ECI Project # 57013187"	**Project Manager: Katherine Miller** 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Field Manager: Mark Dominick** 978.234.5033, 818.599.0702 (cell)
Sampler: michelle dallalah	

									ANALYSIS REQUIRED														
									R	R	R	R	R	R	R	R	R	R	R	C			
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cr, SO_4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	Turbidity, TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)				Comments
Outfall 018	Outfall018_20230321_Comp	3/21/2023 1025	WM	500 mL Poly	1	HNO_3	90	Yes	X											X			
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	1L Poly	1	None	115	No			X												
			WM	500 mL Poly	2	None	120	No				X											
			WM	500 mL Poly	2	None	130	No					X										48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X									48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X							
			WM	1 L Glass Amber	2	None	170	No									X						
			WM	1 L Glass Amber	2	None	180	No										X					
			WM	1L Poly	1	None	185	No							X								
	Outfall018_20230321_Comp_Extra	3/21/2023 1025	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	1 L Glass Amber	2	None	170	No								H							Hold
			WM	1 L Glass Amber	2	None	180	No									H						Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:	Company:
Michelle Dallalah	3/21/23 13:00	H&A		3/21/23 1300	EC
	3/21/23 1710	EC		3-21-23 17:10	

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

2.1/2.1 1.8/1.8 SCII

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:	ANALYSIS REQUIRED
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp	
"Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 ECI Project # 57013187"	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.		
Sampler: michelle dallalah	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R: Total Dissolved Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	R: Cyanide (SM4500-CN-E / E335.2)	R: Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R	R: Total Dissolved Metals: Mercury (E245.1)	C						Comments
Outfall 018	Outfall018_20230321_Comp_F	3/21/2023 1025	WM	1L Poly	1	None	200	Yes	X										
			WM	borosilicate vials	2	None	320	No					X						Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230321_Comp	3/21/2023 1025	WM	500 mL Poly	1	NaOH	220	No		X									
			WM	2.5 Gal Cube	1	None	225	No			X								Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No											

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	3/21/23 13:00	H&A		3/21/23 1300 EC
	3/21/23 1710	EC		3-21-23 17:10

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

2019-2020 Rainy Season
Version 4

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131952-1

Login Number: 131952
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/26/2023 9:28:44 PM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall - 018 Comp

JOB NUMBER

570-131952-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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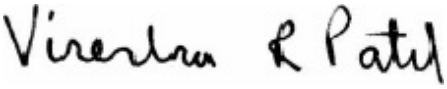
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131952-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131952-2

Comments
No additional comments.

Receipt
The samples were received on 3/21/2023 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.1º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: (CCV 320-669577/2) and (MB 320-668480/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: Outfall018_20230321_Comp (570-131952-1) and (CCV 320-669579/17). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: (CCV 320-669599/2) and (LCS 320-668480/2-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: (CCV 320-670020/1) and (LCSD 320-668480/3-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Client Sample ID: Outfall018_20230321_Comp
Lab Sample ID: 570-131952-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	0.0000010	J,DX	0.000048	0.000000014	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.00000039	J,DX q	0.000048	0.000000013	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000024	J,DX q	0.000048	0.000000010	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000012	J,DX q	0.000048	0.000000012	ug/L	1		1613B	Total/NA
OCDD	0.000037	J,DX MB q	0.000095	0.00000010	ug/L	1		1613B	Total/NA
OCDF	0.0000047	J,DX q	0.000095	0.000000014	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000014	J,DX q	0.000048	0.000000012	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000047	J,DX q	0.000048	0.000000010	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000017	J,DX q	0.000048	0.000000012	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: Outfall018_20230321_Comp
Date Collected: 03/21/23 10:25
Date Received: 03/21/23 17:10

Lab Sample ID: 570-131952-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000095	0.00000014	ug/L		04/19/23 04:39	04/23/23 04:18	1
2,3,7,8-TCDF	ND		0.0000095	0.000000072	ug/L		04/19/23 04:39	04/23/23 04:18	1
1,2,3,7,8-PeCDD	ND		0.000048	0.00000015	ug/L		04/19/23 04:39	04/23/23 04:18	1
1,2,3,7,8-PeCDF	ND		0.000048	0.000000073	ug/L		04/19/23 04:39	04/23/23 04:18	1
2,3,4,7,8-PeCDF	ND		0.000048	0.000000083	ug/L		04/19/23 04:39	04/23/23 04:18	1
1,2,3,4,7,8-HxCDD	**0.0000010**	**J,DX**	0.000048	0.00000014	ug/L		04/19/23 04:39	04/23/23 04:18	1
1,2,3,6,7,8-HxCDD	**0.00000039**	**J,DX q**	0.000048	0.00000013	ug/L		04/19/23 04:39	04/23/23 04:18	1
1,2,3,7,8,9-HxCDD	ND		0.000048	0.00000012	ug/L		04/19/23 04:39	04/23/23 04:18	1
1,2,3,4,7,8-HxCDF	ND		0.000048	0.000000011	ug/L		04/19/23 04:39	04/23/23 04:18	1
1,2,3,6,7,8-HxCDF	ND		0.000048	0.000000011	ug/L		04/19/23 04:39	04/23/23 04:18	1
1,2,3,7,8,9-HxCDF	ND		0.000048	0.00000012	ug/L		04/19/23 04:39	04/23/23 04:18	1
2,3,4,6,7,8-HxCDF	ND		0.000048	0.000000011	ug/L		04/19/23 04:39	04/23/23 04:18	1
1,2,3,4,6,7,8-HpCDD	**0.0000024**	**J,DX q**	0.000048	0.00000010	ug/L		04/19/23 04:39	04/23/23 04:18	1
1,2,3,4,6,7,8-HpCDF	**0.0000012**	**J,DX q**	0.000048	0.00000012	ug/L		04/19/23 04:39	04/23/23 04:18	1
1,2,3,4,7,8,9-HpCDF	ND		0.000048	0.00000013	ug/L		04/19/23 04:39	04/23/23 04:18	1
OCDD	**0.000037**	**J,DX MB q**	0.000095	0.0000010	ug/L		04/19/23 04:39	04/23/23 04:18	1
OCDF	**0.0000047**	**J,DX q**	0.000095	0.00000014	ug/L		04/19/23 04:39	04/23/23 04:18	1
Total TCDD	ND		0.0000095	0.00000014	ug/L		04/19/23 04:39	04/23/23 04:18	1
Total TCDF	ND		0.0000095	0.000000072	ug/L		04/19/23 04:39	04/23/23 04:18	1
Total PeCDD	ND		0.000048	0.00000015	ug/L		04/19/23 04:39	04/23/23 04:18	1
Total PeCDF	ND		0.000048	0.000000073	ug/L		04/19/23 04:39	04/23/23 04:18	1
Total HxCDD	**0.0000014**	**J,DX q**	0.000048	0.00000012	ug/L		04/19/23 04:39	04/23/23 04:18	1
Total HxCDF	ND		0.000048	0.000000011	ug/L		04/19/23 04:39	04/23/23 04:18	1
Total HpCDD	**0.0000047**	**J,DX q**	0.000048	0.00000010	ug/L		04/19/23 04:39	04/23/23 04:18	1
Total HpCDF	**0.0000017**	**J,DX q**	0.000048	0.00000012	ug/L		04/19/23 04:39	04/23/23 04:18	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*70*		*25 - 164*	*04/19/23 04:39*	*04/23/23 04:18*	*1*
13C-2,3,7,8-TCDF	*63*		*24 - 169*	*04/19/23 04:39*	*04/23/23 04:18*	*1*
13C-1,2,3,7,8-PeCDD	*71*		*25 - 181*	*04/19/23 04:39*	*04/23/23 04:18*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: Outfall018_20230321_Comp **Lab Sample ID: 570-131952-1**
Date Collected: 03/21/23 10:25 **Matrix: Water**
Date Received: 03/21/23 17:10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDF	71		24 - 185	04/19/23 04:39	04/23/23 04:18	1
13C-2,3,4,7,8-PeCDF	71		21 - 178	04/19/23 04:39	04/23/23 04:18	1
13C-1,2,3,4,7,8-HxCDD	66		32 - 141	04/19/23 04:39	04/23/23 04:18	1
13C-1,2,3,6,7,8-HxCDD	65		28 - 130	04/19/23 04:39	04/23/23 04:18	1
13C-1,2,3,4,7,8-HxCDF	62		26 - 152	04/19/23 04:39	04/23/23 04:18	1
13C-1,2,3,6,7,8-HxCDF	61		26 - 123	04/19/23 04:39	04/23/23 04:18	1
13C-1,2,3,7,8,9-HxCDF	59		29 - 147	04/19/23 04:39	04/23/23 04:18	1
13C-2,3,4,6,7,8-HxCDF	62		28 - 136	04/19/23 04:39	04/23/23 04:18	1
13C-1,2,3,4,6,7,8-HpCDD	71		23 - 140	04/19/23 04:39	04/23/23 04:18	1
13C-1,2,3,4,6,7,8-HpCDF	55		28 - 143	04/19/23 04:39	04/23/23 04:18	1
13C-1,2,3,4,7,8,9-HpCDF	60		26 - 138	04/19/23 04:39	04/23/23 04:18	1
13C-OCDD	54		17 - 157	04/19/23 04:39	04/23/23 04:18	1
13C-OCDF	50		17 - 157	04/19/23 04:39	04/23/23 04:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	92		35 - 197	04/19/23 04:39	04/23/23 04:18	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Job ID: 570-131952-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (35-197)								
570-131952-1	Outfall018_20230321_Comp	92								
MB 320-668480/1-A	Method Blank	97								

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (31-191)								
LCS 320-668480/2-A	Lab Control Sample	95								
LCSD 320-668480/3-A	Lab Control Sample Dup	100								

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Job ID: 570-131952-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-131952-1	Outfall018_20230321_Comp	70	63	71	71	71	66	65	62
MB 320-668480/1-A	Method Blank	73	65	69	70	69	71	72	62

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-131952-1	Outfall018_20230321_Comp	61	59	62	71	55	60	54	50
MB 320-668480/1-A	Method Blank	62	60	65	78	59	64	59	52

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-668480/2-A	Lab Control Sample	70	69	70	70	70	72	75	68
LCSD 320-668480/3-A	Lab Control Sample Dup	73	83	75	77	79	71	70	66

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-668480/2-A	Lab Control Sample	70	66	70	75	61	65	69	61
LCSD 320-668480/3-A	Lab Control Sample Dup	68	74	72	74	63	74	82	75

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-668480/1-A
Matrix: Water
Analysis Batch: 669577

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 668480

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000026	ug/L		04/19/23 04:39	04/22/23 19:59	1
2,3,7,8-TCDF	ND		0.000010	0.000000084	ug/L		04/19/23 04:39	04/22/23 19:59	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000018	ug/L		04/19/23 04:39	04/22/23 19:59	1
1,2,3,7,8-PeCDF	ND		0.000050	0.000000093	ug/L		04/19/23 04:39	04/22/23 19:59	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000010	ug/L		04/19/23 04:39	04/22/23 19:59	1
1,2,3,4,7,8-HxCDD	ND		0.000050	0.00000013	ug/L		04/19/23 04:39	04/22/23 19:59	1
1,2,3,6,7,8-HxCDD	ND		0.000050	0.00000012	ug/L		04/19/23 04:39	04/22/23 19:59	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.000000011	ug/L		04/19/23 04:39	04/22/23 19:59	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.000000069	ug/L		04/19/23 04:39	04/22/23 19:59	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.000000068	ug/L		04/19/23 04:39	04/22/23 19:59	1
1,2,3,7,8,9-HxCDF	ND		0.000050	0.000000071	ug/L		04/19/23 04:39	04/22/23 19:59	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.000000063	ug/L		04/19/23 04:39	04/22/23 19:59	1
1,2,3,4,6,7,8-HpCDD	ND		0.000050	0.00000062	ug/L		04/19/23 04:39	04/22/23 19:59	1
1,2,3,4,6,7,8-HpCDF	ND		0.000050	0.00000013	ug/L		04/19/23 04:39	04/22/23 19:59	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.00000014	ug/L		04/19/23 04:39	04/22/23 19:59	1
OCDD	0.0000109	J,DX	0.00010	0.00000023	ug/L		04/19/23 04:39	04/22/23 19:59	1
OCDF	ND		0.00010	0.00000047	ug/L		04/19/23 04:39	04/22/23 19:59	1
Total TCDD	ND		0.000010	0.00000026	ug/L		04/19/23 04:39	04/22/23 19:59	1
Total TCDF	ND		0.000010	0.000000084	ug/L		04/19/23 04:39	04/22/23 19:59	1
Total PeCDD	ND		0.000050	0.00000018	ug/L		04/19/23 04:39	04/22/23 19:59	1
Total PeCDF	ND		0.000050	0.000000093	ug/L		04/19/23 04:39	04/22/23 19:59	1
Total HxCDD	ND		0.000050	0.000000011	ug/L		04/19/23 04:39	04/22/23 19:59	1
Total HxCDF	ND		0.000050	0.000000063	ug/L		04/19/23 04:39	04/22/23 19:59	1
Total HpCDD	ND		0.000050	0.00000062	ug/L		04/19/23 04:39	04/22/23 19:59	1
Total HpCDF	ND		0.000050	0.00000013	ug/L		04/19/23 04:39	04/22/23 19:59	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*73*		*25 - 164*	*04/19/23 04:39*	*04/22/23 19:59*	*1*
13C-2,3,7,8-TCDF	*65*		*24 - 169*	*04/19/23 04:39*	*04/22/23 19:59*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-668480/1-A
Matrix: Water
Analysis Batch: 669577

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 668480

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDD	69		25 - 181	04/19/23 04:39	04/22/23 19:59	1
13C-1,2,3,7,8-PeCDF	70		24 - 185	04/19/23 04:39	04/22/23 19:59	1
13C-2,3,4,7,8-PeCDF	69		21 - 178	04/19/23 04:39	04/22/23 19:59	1
13C-1,2,3,4,7,8-HxCDD	71		32 - 141	04/19/23 04:39	04/22/23 19:59	1
13C-1,2,3,6,7,8-HxCDD	72		28 - 130	04/19/23 04:39	04/22/23 19:59	1
13C-1,2,3,4,7,8-HxCDF	62		26 - 152	04/19/23 04:39	04/22/23 19:59	1
13C-1,2,3,6,7,8-HxCDF	62		26 - 123	04/19/23 04:39	04/22/23 19:59	1
13C-1,2,3,7,8,9-HxCDF	60		29 - 147	04/19/23 04:39	04/22/23 19:59	1
13C-2,3,4,6,7,8-HxCDF	65		28 - 136	04/19/23 04:39	04/22/23 19:59	1
13C-1,2,3,4,6,7,8-HpCDD	78		23 - 140	04/19/23 04:39	04/22/23 19:59	1
13C-1,2,3,4,6,7,8-HpCDF	59		28 - 143	04/19/23 04:39	04/22/23 19:59	1
13C-1,2,3,4,7,8,9-HpCDF	64		26 - 138	04/19/23 04:39	04/22/23 19:59	1
13C-OCDD	59		17 - 157	04/19/23 04:39	04/22/23 19:59	1
13C-OCDF	52		17 - 157	04/19/23 04:39	04/22/23 19:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	97		35 - 197	04/19/23 04:39	04/22/23 19:59	1

Lab Sample ID: LCS 320-668480/2-A
Matrix: Water
Analysis Batch: 669599

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 668480

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000187		ug/L		93	67 - 158
2,3,7,8-TCDF	0.000200	0.000193		ug/L		96	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.000932		ug/L		93	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.000866		ug/L		87	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000878		ug/L		88	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.000803		ug/L		80	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000871		ug/L		87	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000838		ug/L		84	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.000861		ug/L		86	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000870		ug/L		87	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.000877		ug/L		88	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000864		ug/L		86	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.000798		ug/L		80	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.000908		ug/L		91	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000836		ug/L		84	78 - 138
OCDD	0.00200	0.00171		ug/L		86	78 - 144
OCDF	0.00200	0.00186		ug/L		93	63 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	70		20 - 175
13C-2,3,7,8-TCDF	69		22 - 152
13C-1,2,3,7,8-PeCDD	70		21 - 227
13C-1,2,3,7,8-PeCDF	70		21 - 192
13C-2,3,4,7,8-PeCDF	70		13 - 328

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-668480/2-A
Matrix: Water
Analysis Batch: 669599

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 668480

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCDD	72		21 - 193
13C-1,2,3,6,7,8-HxCDD	75		25 - 163
13C-1,2,3,4,7,8-HxCDF	68		19 - 202
13C-1,2,3,6,7,8-HxCDF	70		21 - 159
13C-1,2,3,7,8,9-HxCDF	66		17 - 205
13C-2,3,4,6,7,8-HxCDF	70		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	75		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	61		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	65		20 - 186
13C-OCDD	69		13 - 199
13C-OCDF	61		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	95		31 - 191

Lab Sample ID: LCSD 320-668480/3-A
Matrix: Water
Analysis Batch: 670020

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 668480

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000195		ug/L		98	67 - 158	4	50
2,3,7,8-TCDF			0.000200	0.000192		ug/L		96	75 - 158	0	50
1,2,3,7,8-PeCDD			0.00100	0.000866		ug/L		87	70 - 142	7	50
1,2,3,7,8-PeCDF			0.00100	0.000854		ug/L		85	80 - 134	1	50
2,3,4,7,8-PeCDF			0.00100	0.000871		ug/L		87	68 - 160	1	50
1,2,3,4,7,8-HxCDD			0.00100	0.000823		ug/L		82	70 - 164	2	50
1,2,3,6,7,8-HxCDD			0.00100	0.000838		ug/L		84	76 - 134	4	50
1,2,3,7,8,9-HxCDD			0.00100	0.000817		ug/L		82	64 - 162	3	50
1,2,3,4,7,8-HxCDF			0.00100	0.000859		ug/L		86	72 - 134	0	50
1,2,3,6,7,8-HxCDF			0.00100	0.000846		ug/L		85	84 - 130	3	50
1,2,3,7,8,9-HxCDF			0.00100	0.000820		ug/L		82	78 - 130	7	50
2,3,4,6,7,8-HxCDF			0.00100	0.000826		ug/L		83	70 - 156	5	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000786		ug/L		79	70 - 140	2	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.000855		ug/L		85	82 - 122	6	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000789		ug/L		79	78 - 138	6	50
OCDD			0.00200	0.00156		ug/L		78	78 - 144	9	50
OCDF			0.00200	0.00163		ug/L		82	63 - 170	13	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	73		20 - 175
13C-2,3,7,8-TCDF	83		22 - 152
13C-1,2,3,7,8-PeCDD	75		21 - 227
13C-1,2,3,7,8-PeCDF	77		21 - 192
13C-2,3,4,7,8-PeCDF	79		13 - 328
13C-1,2,3,4,7,8-HxCDD	71		21 - 193
13C-1,2,3,6,7,8-HxCDD	70		25 - 163
13C-1,2,3,4,7,8-HxCDF	66		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-668480/3-A
Matrix: Water
Analysis Batch: 670020

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 668480

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	68		21 - 159
13C-1,2,3,7,8,9-HxCDF	74		17 - 205
13C-2,3,4,6,7,8-HxCDF	72		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	74		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	63		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	74		20 - 186
13C-OCDD	82		13 - 199
13C-OCDF	75		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	100		31 - 191

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Comp

Specialty Organics

Prep Batch: 668480

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	1613B	
MB 320-668480/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-668480/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-668480/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 669577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-668480/1-A	Method Blank	Total/NA	Water	1613B	668480

Analysis Batch: 669579

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	1613B	668480

Analysis Batch: 669599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 320-668480/2-A	Lab Control Sample	Total/NA	Water	1613B	668480

Analysis Batch: 670020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 320-668480/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	668480

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Comp

Client Sample ID: Outfall018_20230321_Comp
Lab Sample ID: 570-131952-1
Date Collected: 03/21/23 10:25
Matrix: Water
Date Received: 03/21/23 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			1052.3 mL	20.0 uL	668480	04/19/23 04:39	BLR	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	669579	04/23/23 04:18	GRB	EET SAC
	Instrument ID: DFS 1									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	06-01-23
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-24
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-24
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-24
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	02-28-26
Utah	NELAP	CA000442021-12	02-28-23 *
Virginia	NELAP	460278	03-14-24
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Job ID: 570-131952-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131952-1	Outfall018_20230321_Comp	Water	03/21/23 10:25	03/21/23 17:10

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-131952 Chain of Custody

Client Name/Address:	Project:	ANALYSIS REQUIRED
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp	
"Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 ECI Project # 57013187"	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	
Sampler: michelle dallalah		

									R: Total Recoverable Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	R: TCDD (and all congeners) (E1613B)	R: BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	R: Surfactants (MBAS) (SM5540C/E425.1)	R: Cr, SO_4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	R: Turbidity, TDS (SM2540C/E180.1)	R: TSS (160.2 (SM2540D))	R: Ammonia-N (350.2)	R: alpha-BHC (E608)	R: 2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	R: Total Recoverable Metals: Mercury (E245.1)	C		Comments
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD															
Outfall 018	Outfall018_20230321_Comp	3/21/2023 1025	WM	500 mL Poly	1	HNO_3	90	Yes	X												X		
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	1L Poly	1	None	115	No			X												
			WM	500 mL Poly	2	None	120	No				X											
			WM	500 mL Poly	2	None	130	No					X										48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X									48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X							
			WM	1 L Glass Amber	2	None	170	No									X						
			WM	1 L Glass Amber	2	None	180	No										X					
			WM	1L Poly	1	None	185	No							X								
	Outfall018_20230321_Comp_Extra	3/21/2023 1025	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	1 L Glass Amber	2	None	170	No										H					Hold
			WM	1 L Glass Amber	2	None	180	No												H			Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:	Company:
Michelle Dallalah	3/21/23	13:00 H&A		3/21/23 1300	EC
	3/21/23	1710 EC		3-21-23	17:10

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

2.1/2.1 1.8/1.8 SCII

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:	ANALYSIS REQUIRED
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp	
"Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 ECI Project # 57013187"	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	
Sampler: michelle dallalah		

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R: Total Dissolved Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	R: Cyanide (SM4500-CN-E / E335.2)	R: Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R	R: Total Dissolved Metals: Mercury (E245.1)	C						Comments
Outfall 018	Outfall018_20230321_Comp_F	3/21/2023 1025	WM	1L Poly	1	None	200	Yes	X										
			WM	borosilicate vials	2	None	320	No					X						Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230321_Comp	3/21/2023 1025	WM	500 mL Poly	1	NaOH	220	No		X									
			WM	2.5 Gal Cube	1	None	225	No			X								Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No											

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	3/21/23 13:00	H&A		3/21/23 1300 EC
			Received By	Date/Time:
Relinquished By	3/21/23 1710	EC		
			Received By	3-21-23 17:10
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-211864.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-131952-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 4/6/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall - 018 Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall018_20230321_Comp (570-131952-1)	3/21/23	10:25 Pacific		Water			X	2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:				
Relinquished by:	Date/Time: 03/22/23 9:14	Company: EL	Received by:	Date/Time: 3.23.23 940	Company: EL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.20

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131952-2

Login Number: 131952
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131952-2

Login Number: 131952
List Number: 3
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 03/23/23 02:09 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.2c 1.7c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall - 018 Comp

JOB NUMBER

570-131952-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Eurofins Calscience

Job Notes

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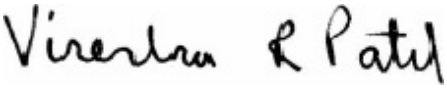
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131952-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131952-3

Comments
No additional comments.

Receipt
The samples were received on 3/21/2023 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.1º C.

RAD
Method 900.0: Gross Alpha and Gross Beta batch 607422
The matrix spike (MS) recoveries for Gross Alpha and Gross Beta were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. (570-131940-R-1-H MS) and (570-131940-R-1-I MSBT)

Method 900.0: Gross Alpha and Gross Beta batch 607422
The detection goal was not met for the following samples due to a reduction of the sample size attributed to high residual mass: (570-131940-R-1-G) and (570-131940-R-1-J DU). Analytical results are reported with the detection limit achieved.

Method 900.0: Gross Alpha and Gross Beta batch 607422
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230321_Comp (570-131952-1), (LCS 160-607422/2-A), (LCSB 160-607422/3-A), (MB 160-607422/1-A), (570-131940-R-1-G), (570-131940-R-1-J DU), (570-131940-R-1-H MS) and (570-131940-R-1-I MSBT)

Method 900.0: Gross Alpha and Gross Beta batch 607422
The sample duplicate (DUP) precision for Gross Beta was outside control limits. Sample matrix interference is suspected. Sample was prepped at a dilution due to high residual mass
(570-131940-R-1-J DU)

Method 901.1: Gamma Prep Batch 160-605283
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211

Job ID: 570-131952-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

Th-227 Pb-211
Bi-214 Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Outfall018_20230321_Comp (570-131952-1), (570-131073-AT-1-B) and (570-131073-AT-1-C DU)

Methods 903.0, 9315: Radium-226 prep batch 160-605610:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. Outfall018_20230321_Comp (570-131952-1), (LCS 160-605610/2-A), (LCSD 160-605610/3-A) and (MB 160-605610/1-A)

Methods 904.0, 9320: Radium-228 batch 605613
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230321_Comp (570-131952-1), (LCS 160-605613/2-A), (LCSD 160-605613/3-A) and (MB 160-605613/1-A)

Method 905: Strontium-90 batch 606565
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230321_Comp (570-131952-1), (LCS 160-606565/2-A), (LCSD 160-606565/3-A) and (MB 160-606565/1-A)

Method 906.0: Tritium 607890
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are decay corrected to sample date and time as the Activity Reference Date. Outfall018_20230321_Comp (570-131952-1), (LCS 160-607890/2-A), (MB 160-607890/1-A), (570-131938-I-1-A), (570-131938-I-1-B DU), (570-132136-Q-1-A) and (570-132136-Q-1-B MS)

Methods A-01-R, U-02-RC: Isotopic Uranium batch 607182
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230321_Comp (570-131952-1), (LCS 160-607182/2-A), (MB 160-607182/1-A), (570-131945-N-1-E) and (570-131945-N-1-F DU)

Method PrecSep_0: Radium 228 Prep Batch 160-605613

The following sample was prepared at a reduced aliquot due to Matrix: Outfall018_20230321_Comp (570-131952-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21: Radium 226 Prep Batch 160-605610

The following sample was prepared at a reduced aliquot due to Matrix: Outfall018_20230321_Comp (570-131952-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Job ID: 570-131952-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method PrecSep-7: Strontium-90 Prep Batch 160-606565

Insufficient sample volume was available to perform a sample duplicate for the following samples: Outfall018_20230321_Comp (570-131952-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Client Sample ID: Outfall018_20230321_Comp
Lab Sample ID: 570-131952-1

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: Outfall018_20230321_Comp
Lab Sample ID: 570-131952-1
Date Collected: 03/21/23 10:25
Matrix: Water
Date Received: 03/21/23 17:10

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	1.78	U	1.67	1.68	3.00	2.63	pCi/L	04/14/23 10:37	04/21/23 18:23	1
Gross Beta	**1.63**		0.693	0.712	4.00	0.957	pCi/L	04/14/23 10:37	04/21/23 18:23	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: Outfall018_20230321_Comp
Lab Sample ID: 570-131952-1
Date Collected: 03/21/23 10:25
Matrix: Water
Date Received: 03/21/23 17:10

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	1.62	U	6.32	6.33	20.0	7.49	pCi/L	03/28/23 16:33	04/12/23 14:28	1
Potassium-40	**100**		56.8	58.0		50.5	pCi/L	03/28/23 16:33	04/12/23 14:28	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: Outfall018_20230321_Comp
Date Collected: 03/21/23 10:25
Date Received: 03/21/23 17:10

Lab Sample ID: 570-131952-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00779	U	0.0698	0.0698	1.00	0.144	pCi/L	03/30/23 08:51	04/25/23 14:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.2*		*30 - 110*	*03/30/23 08:51*	*04/25/23 14:07*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: Outfall018_20230321_Comp
Date Collected: 03/21/23 10:25
Date Received: 03/21/23 17:10

Lab Sample ID: 570-131952-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.700	U	0.480	0.484	1.00	0.718	pCi/L	03/30/23 09:10	04/20/23 15:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.2*		*30 - 110*	*03/30/23 09:10*	*04/20/23 15:05*	*1*
Y Carrier	*80.7*		*30 - 110*	*03/30/23 09:10*	*04/20/23 15:05*	*1*

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: Outfall018_20230321_Comp
Date Collected: 03/21/23 10:25
Date Received: 03/21/23 17:10

Lab Sample ID: 570-131952-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.269	U	0.298	0.298	3.00	0.488	pCi/L	04/07/23 11:12	04/17/23 19:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*86.7*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:13*	*1*
Y Carrier	*52.7*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:13*	*1*

Client Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: Outfall018_20230321_Comp
Lab Sample ID: 570-131952-1
Date Collected: 03/21/23 10:25
Matrix: Water
Date Received: 03/21/23 17:10

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-118	U	212	213	500	409	pCi/L	04/18/23 11:12	04/19/23 08:41	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: Outfall018_20230321_Comp
Date Collected: 03/21/23 10:25
Date Received: 03/21/23 17:10

Lab Sample ID: 570-131952-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.773		0.277	0.280	1.00	0.132	pCi/L	04/12/23 15:01	04/17/23 22:46	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*89.6*		*30 - 110*	*04/12/23 15:01*	*04/17/23 22:46*	*1*

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Job ID: 570-131952-3

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-131952-1	Outfall018_20230321_Comp	97.2
LCS 160-605610/2-A	Lab Control Sample	95.4
LCSD 160-605610/3-A	Lab Control Sample Dup	92.7
MB 160-605610/1-A	Method Blank	84.6

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-131952-1	Outfall018_20230321_Comp	97.2	80.7
LCS 160-605613/2-A	Lab Control Sample	95.4	86.0
LCSD 160-605613/3-A	Lab Control Sample Dup	92.7	84.9
MB 160-605613/1-A	Method Blank	84.6	84.5

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-131952-1	Outfall018_20230321_Comp	86.7	52.7
LCS 160-606565/2-A	Lab Control Sample	86.3	77.0
LCSD 160-606565/3-A	Lab Control Sample Dup	85.1	69.9
MB 160-606565/1-A	Method Blank	86.6	81.9

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-131952-1	Outfall018_20230321_Comp	89.6
LCS 160-607182/2-A	Lab Control Sample	76.8
MB 160-607182/1-A	Method Blank	81.7

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-607422/1-A
Matrix: Water
Analysis Batch: 608478

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 607422

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.2952	U	0.323	0.325	3.00	0.811	pCi/L	04/14/23 10:37	04/21/23 10:02	1
Gross Beta	-0.7584	U	0.415	0.422	4.00	0.896	pCi/L	04/14/23 10:37	04/21/23 10:02	1

Lab Sample ID: LCS 160-607422/2-A
Matrix: Water
Analysis Batch: 608478

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607422

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	60.65		8.70	3.00	2.71	pCi/L	120	75 - 125

Lab Sample ID: LCSB 160-607422/3-A
Matrix: Water
Analysis Batch: 608478

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607422

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.4	74.69		8.01	4.00	1.10	pCi/L	102	75 - 125

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-605283/1-A
Matrix: Water
Analysis Batch: 607160

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605283

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.793	U	6.67	6.68	20.0	7.49	pCi/L	03/28/23 16:33	04/12/23 04:01	1
Potassium-40	27.15	U	82.6	82.7		106	pCi/L	03/28/23 16:33	04/12/23 04:01	1

Lab Sample ID: LCS 160-605283/2-A
Matrix: Water
Analysis Batch: 607188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605283

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	139700		16600		562	pCi/L	103	75 - 125
Cesium-137	40800	39690		4740	20.0	156	pCi/L	97	75 - 125
Cobalt-60	17700	17220		2060		78.1	pCi/L	97	75 - 125

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-605610/1-A
Matrix: Water
Analysis Batch: 608688

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605610

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02691	U	0.0825	0.0825	1.00	0.154	pCi/L	03/30/23 08:51	04/25/23 12:13	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.6*		*30 - 110*	*03/30/23 08:51*	*04/25/23 12:13*	*1*

Lab Sample ID: LCS 160-605610/2-A
Matrix: Water
Analysis Batch: 608688

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605610

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	9.296		1.01	1.00	0.105	pCi/L	82	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*95.4*		*30 - 110*

Lab Sample ID: LCSD 160-605610/3-A
Matrix: Water
Analysis Batch: 608691

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 605610

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	8.720		0.965	1.00	0.125	pCi/L	77	75 - 125	0.29	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*92.7*		*30 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-605613/1-A
Matrix: Water
Analysis Batch: 608230

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605613

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.8792		0.419	0.427	1.00	0.564	pCi/L	03/30/23 09:10	04/20/23 15:03	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.6*		*30 - 110*	*03/30/23 09:10*	*04/20/23 15:03*	*1*
Y Carrier	*84.5*		*30 - 110*	*03/30/23 09:10*	*04/20/23 15:03*	*1*

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-605613/2-A
Matrix: Water
Analysis Batch: 608230

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605613

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.02	8.720		1.20	1.00	0.484	pCi/L	109	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*95.4*		*30 - 110*
Y Carrier	*86.0*		*30 - 110*

Lab Sample ID: LCSD 160-605613/3-A
Matrix: Water
Analysis Batch: 608230

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 605613

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.02	7.700		1.12	1.00	0.537	pCi/L	96	75 - 125	0.44	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*92.7*		*30 - 110*
Y Carrier	*84.9*		*30 - 110*

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-606565/1-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606565

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.1675	U	0.204	0.204	3.00	0.337	pCi/L	04/07/23 11:12	04/17/23 19:03	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*86.6*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:03*	*1*
Y Carrier	*81.9*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:03*	*1*

Lab Sample ID: LCS 160-606565/2-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606565

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.34	7.570		0.853	3.00	0.305	pCi/L	103	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*86.3*		*30 - 110*
Y Carrier	*77.0*		*30 - 110*

Method: 905 - Strontium-90 (GFPC) (Continued)

Lab Sample ID: LCSD 160-606565/3-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 606565

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.34	7.501		0.887	3.00	0.401	pCi/L	102	75 - 125	0.04	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*85.1*		*30 - 110*
Y Carrier	*69.9*		*30 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-607890/1-A
Matrix: Water
Analysis Batch: 608161

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 607890

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-102.7	U	224	224	500	433	pCi/L	04/18/23 11:12	04/19/23 06:41	1

Lab Sample ID: LCS 160-607890/2-A
Matrix: Water
Analysis Batch: 608161

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607890

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2090	1604		396	500	420	pCi/L	77	75 - 125		

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-607182/1-A
Matrix: Water
Analysis Batch: 607712

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 607182

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.08287	U	0.138	0.138	1.00	0.229	pCi/L	04/12/23 15:01	04/17/23 22:47	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*81.7*		*30 - 110*	*04/12/23 15:01*	*04/17/23 22:47*	*1*

Lab Sample ID: LCS 160-607182/2-A
Matrix: Water
Analysis Batch: 607726

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607182

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	14.02		1.67	1.00	0.196	pCi/L	110	75 - 125		
Uranium-238			13.0	15.41		1.79	1.00	0.168	pCi/L	118	75 - 125		

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Job ID: 570-131952-3

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: LCS 160-607182/2-A
Matrix: Water
Analysis Batch: 607726

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607182

Tracer	LCS %Yield	LCS Qualifier	Limits
Uranium-232	76.8		30 - 110

Rad

Prep Batch: 605283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	Fill_Geo-0	
MB 160-605283/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-605283/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 605610

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	PrecSep-21	
MB 160-605610/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-605610/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-605610/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 605613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	PrecSep_0	
MB 160-605613/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-605613/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-605613/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 606565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	PrecSep-7	
MB 160-606565/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-606565/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-606565/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 607182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	ExtChrom	
MB 160-607182/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-607182/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 607422

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	Evaporation	
MB 160-607422/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-607422/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-607422/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Prep Batch: 607890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131952-1	Outfall018_20230321_Comp	Total/NA	Water	LSC_Dist_Susp	
MB 160-607890/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-607890/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Comp

Client Sample ID: Outfall018_20230321_Comp
Lab Sample ID: 570-131952-1
Date Collected: 03/21/23 10:25
Matrix: Water
Date Received: 03/21/23 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Evaporation			200.01 mL	1.0 g	607422	04/14/23 10:37	MST	EET SL
Total/NA	Analysis	900.0		1			608478	04/21/23 18:23	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	605283	03/28/23 16:33	SAC	EET SL
Total/NA	Analysis	901.1		1			607190	04/12/23 14:28	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	PrecSep-21			758.58 mL	1.0 g	605610	03/30/23 08:51	DJP	EET SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	608688	04/25/23 14:07	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			758.58 mL	1.0 g	605613	03/30/23 09:10	DJP	EET SL
Total/NA	Analysis	904.0		1			608230	04/20/23 15:05	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep-7			996.98 mL	1.0 g	606565	04/07/23 11:12	DJP	EET SL
Total/NA	Analysis	905		1			607842	04/17/23 19:13	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	LSC_Dist_Susp			100.60 mL	1.0 g	607890	04/18/23 11:12	ZR	EET SL
Total/NA	Analysis	906.0		1			608161	04/19/23 08:41	REV	EET SL
	Instrument ID: LSC3180									
Total/NA	Prep	ExtChrom			500.27 mL	1.0 mL	607182	04/12/23 15:01	SRE	EET SL
Total/NA	Analysis	A-01-R		1			607720	04/17/23 22:46	FLC	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	06-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-23
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131952-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy
EPA = US Environmental Protection Agency
None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Job ID: 570-131952-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131952-1	Outfall018_20230321_Comp	Water	03/21/23 10:25	03/21/23 17:10

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-131952 Chain of Custody

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp
"Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 ECI Project # 57013187"	**Project Manager:** Katherine Miller 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Field Manager:** Mark Dominick 978.234.5033, 818.599.0702 (cell)
Sampler: michelle dallalah	

									ANALYSIS REQUIRED													
									R	R	R	R	R	R	R	R	R	R	R	C		
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cr, SO_4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	Turbidity, TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)				Comments
Outfall 018	Outfall018_20230321_Comp	3/21/2023 1025	WM	500 mL Poly	1	HNO_3	90	Yes	X										X			
			WM	1 L Glass Amber	2	None	110	No		X												
			WM	1L Poly	1	None	115	No			X											
			WM	500 mL Poly	2	None	120	No				X										
			WM	500 mL Poly	2	None	130	No					X									48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X								48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X						
			WM	1 L Glass Amber	2	None	170	No									X					
			WM	1 L Glass Amber	2	None	180	No										X				
			WM	1L Poly	1	None	185	No							X							
	Outfall018_20230321_Comp_Extra	3/21/2023 1025	WM	1 L Glass Amber	2	None	110	No		H												Hold
			WM	1 L Glass Amber	2	None	170	No								H						Hold
			WM	1 L Glass Amber	2	None	180	No										H				Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:	Company:
Michelle Dallalah	3/21/23 13:00	H&A		3/21/23 1300	EC
	3/21/23 1710	EC		3-21-23 17:10	

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X___
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: ___X___

2.1/2.1 1.8/1.8 SCII

2019-2020 Rainy Season
Version 4

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:	ANALYSIS REQUIRED
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp	
Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 ECI Project # 57013187		
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	
Sampler: michelle dallalah	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R: Total Dissolved Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	R: Cyanide (SM4500-CN-E / E335.2)	R: Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R	R: Total Dissolved Metals: Mercury (E245.1)	C						Comments
Outfall 018	Outfall018_20230321_Comp_F	3/21/2023 1025	WM	1L Poly	1	None	200	Yes	X										
			WM	borosilicate vials	2	None	320	No					X						Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
	Outfall018_20230321_Comp	3/21/2023 1025	WM	500 mL Poly	1	NaOH	220	No		X									
			WM	2.5 Gal Cube	1	None	225	No			X								Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No											

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
Michelle Dallalah	3/21/23 13:00	H&A		3/21/23 1300 EC
			Received By	Date/Time:
Relinquished By	3/21/23 1710	EC		
Relinquished By	Date/Time:	Company:	Received By	3-21-23 17:10 Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-211866.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131952-3
Address: 13715 Rider Trail North,	Due Date Requested: 4/21/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall - 018 Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	906.0/LSC_Dist_Susp Tritium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230321_Comp (570-131952-1)	3/21/23	10:25 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation. Ok to Preserve

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 03/22/23 9:24	Company: EC	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

4/26/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131952-3

Login Number: 131952
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131952-3

Login Number: 131952
List Number: 2
Creator: Worthington, Sierra M

List Source: Eurofins St. Louis
List Creation: 03/23/23 12:20 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	Refer to Job Narrative for details.
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/12/2023 8:35:12 PM

JOB DESCRIPTION

Boeing NPDES SSFL - Outfall 018 Grab

JOB NUMBER

570-132958-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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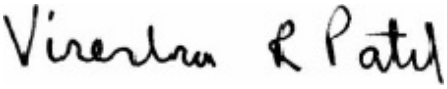
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-132958-1
Project/Site: Boeing NPDES SSFL - Outfall 018 Grab

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132958-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132958-1

Comments
No additional comments.

Receipt
The samples were received on 3/29/2023 6:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.4º C.

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-316247. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method SM 2540F: Insufficient sample volume was available to perform a sample duplicate (DUP) associated with analytical batch 570-316086.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 1664A: The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-316994.
Method: 1664.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132958-1
Project/Site: Boeing NPDES SSFL - Outfall 018 Grab

Client Sample ID: Outfall18_20230329_Grab
Lab Sample ID: 570-132958-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	430		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA

Client Sample ID: TB-20230329
Lab Sample ID: 570-132958-2

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: Outfall18_20230329_Grab **Lab Sample ID: 570-132958-1**
Date Collected: 03/29/23 08:30 **Matrix: Water**
Date Received: 03/29/23 18:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/31/23 06:46	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/31/23 06:46	1
Trichloroethene	ND		0.50	0.17	ug/L			03/31/23 06:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*60 - 140*		*03/31/23 06:46*	*1*
4-Bromofluorobenzene (Surr)	*106*		*60 - 140*		*03/31/23 06:46*	*1*
Dibromofluoromethane (Surr)	*89*		*60 - 140*		*03/31/23 06:46*	*1*
Toluene-d8 (Surr)	*104*		*60 - 140*		*03/31/23 06:46*	*1*

Client Sample ID: TB-20230329 **Lab Sample ID: 570-132958-2**
Date Collected: 03/29/23 08:30 **Matrix: Water**
Date Received: 03/29/23 18:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/31/23 05:20	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/31/23 05:20	1
Trichloroethene	ND		0.50	0.17	ug/L			03/31/23 05:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*60 - 140*		*03/31/23 05:20*	*1*
4-Bromofluorobenzene (Surr)	*105*		*60 - 140*		*03/31/23 05:20*	*1*
Dibromofluoromethane (Surr)	*93*		*60 - 140*		*03/31/23 05:20*	*1*
Toluene-d8 (Surr)	*104*		*60 - 140*		*03/31/23 05:20*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-132958-1
Project/Site: Boeing NPDES SSFL - Outfall 018 Grab

General Chemistry

Client Sample ID: Outfall18_20230329_Grab
Lab Sample ID: 570-132958-1
Date Collected: 03/29/23 08:30
Matrix: Water
Date Received: 03/29/23 18:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	ND		0.96	0.49	mg/L		04/04/23 07:00	04/04/23 11:55	1
Specific Conductance (SM 2510B)	**430**		1.0	1.0	umhos/cm			03/31/23 20:02	1
Settleable Solids (SM 2540F)	ND		0.10	0.10	mL/L			03/30/23 10:55	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132958-1
Project/Site: Boeing NPDES SSFL - Outfall 018 Grab

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-132958-1	Outfall18_20230329_Grab	100	106	89	104
570-132958-2	TB-20230329	107	105	93	104
LCS 570-316247/1003	Lab Control Sample	112	102	99	105
LCSD 570-316247/4	Lab Control Sample Dup	114	103	98	103
MB 570-316247/6	Method Blank	98	98	92	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-316247/6
Matrix: Water
Analysis Batch: 316247

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/30/23 21:22	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/30/23 21:22	1
Trichloroethene	ND		0.50	0.17	ug/L			03/30/23 21:22	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*60 - 140*		*03/30/23 21:22*	*1*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*		*03/30/23 21:22*	*1*
Dibromofluoromethane (Surr)	*92*		*60 - 140*		*03/30/23 21:22*	*1*
Toluene-d8 (Surr)	*101*		*60 - 140*		*03/30/23 21:22*	*1*

Lab Sample ID: LCS 570-316247/1003
Matrix: Water
Analysis Batch: 316247

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1-Dichloroethene			10.0	9.72		ug/L		97	50 - 150		
1,2-Dichloroethane			10.0	11.2		ug/L		112	70 - 130		
Trichloroethene			10.0	10.4		ug/L		104	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*112*		*60 - 140*
4-Bromofluorobenzene (Surr)	*102*		*60 - 140*
Dibromofluoromethane (Surr)	*99*		*60 - 140*
Toluene-d8 (Surr)	*105*		*60 - 140*

Lab Sample ID: LCSD 570-316247/4
Matrix: Water
Analysis Batch: 316247

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene			10.0	10.2		ug/L		102	50 - 150	5	32
1,2-Dichloroethane			10.0	11.5		ug/L		115	70 - 130	2	49
Trichloroethene			10.0	11.1		ug/L		111	65 - 135	7	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*114*		*60 - 140*
4-Bromofluorobenzene (Surr)	*103*		*60 - 140*
Dibromofluoromethane (Surr)	*98*		*60 - 140*
Toluene-d8 (Surr)	*103*		*60 - 140*

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-316994/1-A
Matrix: Water
Analysis Batch: 317298

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 316994

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		1.0	0.51	mg/L		04/04/23 07:00	04/04/23 11:55	1

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: LCS 570-316994/2-A
Matrix: Water
Analysis Batch: 317298

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 316994

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
HEM (Oil & Grease)			40.0	35.1		mg/L		88	78 - 114		

Lab Sample ID: LCSD 570-316994/3-A
Matrix: Water
Analysis Batch: 317298

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 316994

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM (Oil & Grease)			40.0	33.5		mg/L		84	78 - 114	5	18

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-316694/7
Matrix: Water
Analysis Batch: 316694

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/31/23 18:44	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Outfall 018 Grab

Job ID: 570-132958-1

GC/MS VOA

Analysis Batch: 316247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132958-1	Outfall18_20230329_Grab	Total/NA	Water	624.1	
570-132958-2	TB-20230329	Total/NA	Water	624.1	
MB 570-316247/6	Method Blank	Total/NA	Water	624.1	
LCS 570-316247/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-316247/4	Lab Control Sample Dup	Total/NA	Water	624.1	

General Chemistry

Analysis Batch: 316086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132958-1	Outfall18_20230329_Grab	Total/NA	Water	SM 2540F	

Analysis Batch: 316694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132958-1	Outfall18_20230329_Grab	Total/NA	Water	SM 2510B	
MB 570-316694/7	Method Blank	Total/NA	Water	SM 2510B	

Prep Batch: 316994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132958-1	Outfall18_20230329_Grab	Total/NA	Water	1664A	
MB 570-316994/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-316994/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-316994/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 317298

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132958-1	Outfall18_20230329_Grab	Total/NA	Water	1664A	316994
MB 570-316994/1-A	Method Blank	Total/NA	Water	1664A	316994
LCS 570-316994/2-A	Lab Control Sample	Total/NA	Water	1664A	316994
LCSD 570-316994/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	316994

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-132958-1
Project/Site: Boeing NPDES SSFL - Outfall 018 Grab

Client Sample ID: Outfall18_20230329_Grab
Lab Sample ID: 570-132958-1
Date Collected: 03/29/23 08:30
Matrix: Water
Date Received: 03/29/23 18:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	316247	03/31/23 06:46	N1A	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Prep	1664A			1038 mL	1000 mL	316994	04/04/23 07:00	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			317298	04/04/23 11:55	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									
Total/NA	Analysis	SM 2510B		1			316694	03/31/23 20:02	BDH9	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	316086	03/30/23 10:55	ZVB7	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB-20230329
Lab Sample ID: 570-132958-2
Date Collected: 03/29/23 08:30
Matrix: Water
Date Received: 03/29/23 18:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	316247	03/31/23 05:20	N1A	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132958-1
Project/Site: Boeing NPDES SSFL - Outfall 018 Grab

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132958-1
Project/Site: Boeing NPDES SSFL - Outfall 018 Grab

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4

Protocol References:

1664A = EPA-821-98-002

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Outfall 018 Grab

Job ID: 570-132958-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132958-1	Outfall18_20230329_Grab	Water	03/29/23 08:30	03/29/23 18:15
570-132958-2	TB-20230329	Water	03/29/23 08:30	03/29/23 18:15

132958

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

EDBPJ6UX

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Grab
Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 **ECI Project # 57013187**	
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)
Sampler: michelle dallalah	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R Oil & Grease (E1664A-HEM)	R VOCs - only 1,1-DCE, 1,2-DCA, TCE (E624)	R Settleable Solids (E160.5 (SM2540F))	R Conductivity (SM2510B / E120.1)
Outfall 018	Outfall018_20230329_Grab	3/29/2023 1030	WM	1 L Glass Amber	2	HCl	15	No	X			
			WM	40 mL VOA	3	HCl	30	No		X		
			WM	1L Poly	1	None	70	No			X	
			WM	500 mL Poly	1	None	75	No				X
Trip Blanks	TB-20230329	3/29/2023 0830	WQ	40 mL VOA	3	HCl	30	No		X		

Field Readings | Meter serial #

Field Readings: (Include units)

Time of Readings: 0830

DO 16.90 mg/L

pH 6.64 pH unit

Temp 53.1 °C/F

Field readings QC

Checked by: MD

Date/Time: 3-24-2023 / 0830

Comments

570-132958 Chain of Custody

Legend: R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
MD	3-29-2023 / 1045	H&A		3/29/23 1045 EC
	3/29/23 1815	EC		3/29/23 1815
Relinquished By	Date/Time:	Company:	Received By	Date/Time:

Turn-around time: (Check)

24 Hour: _____ 72 Hour: _____ 10 Day: __X__

48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)

Intact: _____ On Ice: _____

Store samples for 6 months.

Data Requirements: (Check)

No Level IV: _____ All Level IV: __X__

2.4 / 2.4 SCH

2019-2020 Rainy Season
Version 4

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132958-1

Login Number: 132958
List Number: 1
Creator: Patel, Jayesh

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/12/2023 8:41:04 PM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall - 018 Comp

JOB NUMBER

570-133047-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Eurofins Calscience

Job Notes

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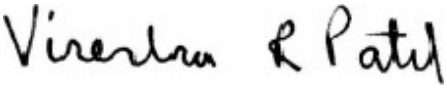
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Qualifiers

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

General Chemistry

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-133047-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-133047-1

Comments
No additional comments.

Receipt
The samples were received on 3/30/2023 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.2º C.

Receipt Exceptions

The reference method requires samples to have a pH of <2. The following samples were received with a pH of 7: <Affected Samples>. The samples were adjusted to the appropriate pH in the laboratory.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: Outfall018_20230330_Comp_F (570-133047-3), Outfall018_20230330_Comp_F (570-133047-3[MS]) and Outfall018_20230330_Comp_F (570-133047-3[MSD]). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method Kelada 01: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 570-317039 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-318053. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Method 8081A LL

Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-317265. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Method 625.1 Sim

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Comp

Job ID: 570-133047-1

Client Sample ID: Outfall018_20230330_Comp — Lab Sample ID: 570-133047-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.9		1.0	0.36	mg/L	1		300.0	Total/NA
Nitrate as N	0.18		0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate	85		1.0	0.24	mg/L	1		300.0	Total/NA
Nitrate Nitrite as N	0.18		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Copper	1.5	J,DX	2.0	0.32	ug/L	1		200.8	Total Recoverable
Ammonia	0.044	J,DX	0.075	0.032	mg/L	1		350.1	Total/NA
Turbidity	0.20		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Dissolved Solids	290		10	8.7	mg/L	1		SM 2540C	Total/NA

Client Sample ID: Outfall018_20230330_Comp_F — Lab Sample ID: 570-133047-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.25	J,DX BU	1.0	0.13	ug/L	1		200.8	Dissolved
Copper	1.6	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.35	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Selenium	0.79	J,DX BU	2.0	0.52	ug/L	1		200.8	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: Outfall018_20230330_Comp
Lab Sample ID: 570-133047-1
Date Collected: 03/30/23 08:05
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		0.94	0.13	ug/L		04/05/23 04:55	04/11/23 20:40	1
2,4-Dinitrotoluene	ND		0.19	0.11	ug/L		04/05/23 04:55	04/11/23 20:40	1
Bis(2-ethylhexyl) phthalate	ND		4.7	3.4	ug/L		04/05/23 04:55	04/11/23 20:40	1
N-Nitrosodimethylamine	ND		0.19	0.18	ug/L		04/05/23 04:55	04/11/23 20:40	1
Pentachlorophenol	ND		0.94	0.80	ug/L		04/05/23 04:55	04/11/23 20:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*67*		*31 - 120*	*04/05/23 04:55*	*04/11/23 20:40*	*1*
Phenol-d6 (Surr)	*27*		*10 - 120*	*04/05/23 04:55*	*04/11/23 20:40*	*1*
p-Terphenyl-d14 (Surr)	*103*		*45 - 120*	*04/05/23 04:55*	*04/11/23 20:40*	*1*
2,4,6-Tribromophenol	*97*		*28 - 127*	*04/05/23 04:55*	*04/11/23 20:40*	*1*
2-Fluorophenol	*38*		*17 - 120*	*04/05/23 04:55*	*04/11/23 20:40*	*1*
Nitrobenzene-d5	*67*		*27 - 120*	*04/05/23 04:55*	*04/11/23 20:40*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 608.3 - Organochlorine Pesticides in Water

Client Sample ID: Outfall018_20230330_Comp
Lab Sample ID: 570-133047-1
Date Collected: 03/30/23 08:05
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		04/06/23 12:20	04/11/23 03:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*54*		*20 - 139*	*04/06/23 12:20*	*04/11/23 03:44*	*1*
DCB Decachlorobiphenyl (Surr)	*55*		*20 - 154*	*04/06/23 12:20*	*04/11/23 03:44*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: Outfall018_20230330_Comp
Lab Sample ID: 570-133047-1
Date Collected: 03/30/23 08:05
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8.9**		1.0	0.36	mg/L			03/31/23 00:20	1
Nitrite as N	ND		0.10	0.043	mg/L			03/31/23 00:20	1
Nitrate as N	**0.18**		0.10	0.020	mg/L			03/31/23 00:20	1
Sulfate	**85**		1.0	0.24	mg/L			03/31/23 00:20	1

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Comp

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: Outfall018_20230330_Comp
Lab Sample ID: 570-133047-1
Date Collected: 03/30/23 08:05
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/31/23 23:44	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: Outfall018_20230330_Comp
Lab Sample ID: 570-133047-1
Date Collected: 03/30/23 08:05
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	0.18		0.10	0.020	mg/L			04/11/23 12:02	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: Outfall018_20230330_Comp
Lab Sample ID: 570-133047-1
Date Collected: 03/30/23 08:05
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		03/31/23 06:19	03/31/23 12:08	1
Copper	**1.5**	**J,DX**	2.0	0.32	ug/L		03/31/23 06:19	03/31/23 12:08	1
Lead	ND		1.0	0.12	ug/L		03/31/23 06:19	03/31/23 12:08	1
Selenium	ND		2.0	0.52	ug/L		03/31/23 06:19	03/31/23 12:08	1
Zinc	ND		20	2.8	ug/L		03/31/23 06:19	03/31/23 12:08	1

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: Outfall018_20230330_Comp_F
Lab Sample ID: 570-133047-3
Date Collected: 03/30/23 08:05
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**0.25**	**J,DX BU**	1.0	0.13	ug/L			03/31/23 09:24	1
Copper	**1.6**	**J,DX BU**	2.0	0.32	ug/L			03/31/23 09:24	1
Lead	**0.35**	**J,DX BU**	1.0	0.12	ug/L			03/31/23 09:24	1
Selenium	**0.79**	**J,DX BU**	2.0	0.52	ug/L			03/31/23 09:24	1
Zinc	ND	BU	20	2.8	ug/L			03/31/23 09:24	1

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: Outfall018_20230330_Comp
Lab Sample ID: 570-133047-1
Date Collected: 03/30/23 08:05
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/31/23 15:48	04/03/23 18:22	1

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: Outfall018_20230330_Comp_F
Lab Sample ID: 570-133047-3
Date Collected: 03/30/23 08:05
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	BU	0.20	0.12	ug/L		03/30/23 23:34	04/03/23 16:38	1

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

General Chemistry

Client Sample ID: Outfall018_20230330_Comp
Lab Sample ID: 570-133047-1
Date Collected: 03/30/23 08:05
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	**0.044**	**J,DX**	0.075	0.032	mg/L		04/05/23 11:55	04/05/23 13:58	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			04/03/23 13:16	1
Turbidity (SM 2130B)	**0.20**		0.05	0.05	NTU			03/30/23 20:46	1
Total Dissolved Solids (SM 2540C)	**290**		10	8.7	mg/L			03/30/23 21:00	1
Total Suspended Solids (SM 2540D)	ND		1.0	0.83	mg/L			04/04/23 13:15	1
Biochemical Oxygen Demand (SM 5210B)	ND	BU	2.0	1.0	mg/L		03/31/23 12:23	03/31/23 13:25	1
MBAS (SM 5540C)	ND		0.20	0.050	mg/L		03/31/23 15:25	03/31/23 15:56	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Job ID: 570-133047-1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	FBP (31-120)	PHL6 (10-120)	TPHd14 (45-120)	TBP (28-127)	2FP (17-120)	NBZ (27-120)
570-133047-1	Outfall018_20230330_Comp	67	27	103	97	38	67
LCS 570-317265/2-A	Lab Control Sample	101	42	117	113	59	79
LCSD 570-317265/3-A	Lab Control Sample Dup	100	45	114	109	63	86
MB 570-317265/1-A	Method Blank	85	36	107	83	53	84

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	TCX2 (20-139)	DCB1 (20-154)
570-133047-1	Outfall018_20230330_Comp	54	55
LCS 570-318053/2-A	Lab Control Sample	63	67
LCSD 570-318053/3-A	Lab Control Sample Dup	64	77
MB 570-318053/1-A	Method Blank	62	65

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-317265/1-A
Matrix: Water
Analysis Batch: 319424

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 317265

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		04/04/23 10:47	04/11/23 19:17	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		04/04/23 10:47	04/11/23 19:17	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		04/04/23 10:47	04/11/23 19:17	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		04/04/23 10:47	04/11/23 19:17	1
Pentachlorophenol	ND		1.0	0.84	ug/L		04/04/23 10:47	04/11/23 19:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*85*		*31 - 120*	*04/04/23 10:47*	*04/11/23 19:17*	*1*
Phenol-d6 (Surr)	*36*		*10 - 120*	*04/04/23 10:47*	*04/11/23 19:17*	*1*
p-Terphenyl-d14 (Surr)	*107*		*45 - 120*	*04/04/23 10:47*	*04/11/23 19:17*	*1*
2,4,6-Tribromophenol	*83*		*28 - 127*	*04/04/23 10:47*	*04/11/23 19:17*	*1*
2-Fluorophenol	*53*		*17 - 120*	*04/04/23 10:47*	*04/11/23 19:17*	*1*
Nitrobenzene-d5	*84*		*27 - 120*	*04/04/23 10:47*	*04/11/23 19:17*	*1*

Lab Sample ID: LCS 570-317265/2-A
Matrix: Water
Analysis Batch: 319424

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 317265

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4,6-Trichlorophenol	20.0	20.2		ug/L		101	52 - 129
2,4-Dinitrotoluene	20.0	22.1		ug/L		111	48 - 127
Bis(2-ethylhexyl) phthalate	20.0	22.5		ug/L		113	29 - 137
N-Nitrosodimethylamine	20.0	11.9		ug/L		60	20 - 120
Pentachlorophenol	20.0	19.1		ug/L		96	38 - 152

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*101*		*31 - 120*
Phenol-d6 (Surr)	*42*		*10 - 120*
p-Terphenyl-d14 (Surr)	*117*		*45 - 120*
2,4,6-Tribromophenol	*113*		*28 - 127*
2-Fluorophenol	*59*		*17 - 120*
Nitrobenzene-d5	*79*		*27 - 120*

Lab Sample ID: LCSD 570-317265/3-A
Matrix: Water
Analysis Batch: 319424

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 317265

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4,6-Trichlorophenol	20.0	20.3		ug/L		101	52 - 129	0	35
2,4-Dinitrotoluene	20.0	23.0		ug/L		115	48 - 127	4	25
Bis(2-ethylhexyl) phthalate	20.0	22.8		ug/L		114	29 - 137	1	50
N-Nitrosodimethylamine	20.0	12.8		ug/L		64	20 - 120	7	21
Pentachlorophenol	20.0	18.7		ug/L		93	38 - 152	2	52

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*100*		*31 - 120*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-317265/3-A
Matrix: Water
Analysis Batch: 319424

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 317265

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Phenol-d6 (Surr)	*45*		*10 - 120*
p-Terphenyl-d14 (Surr)	*114*		*45 - 120*
2,4,6-Tribromophenol	*109*		*28 - 127*
2-Fluorophenol	*63*		*17 - 120*
Nitrobenzene-d5	*86*		*27 - 120*

Method: 608.3 - Organochlorine Pesticides in Water

Lab Sample ID: MB 570-318053/1-A
Matrix: Water
Analysis Batch: 318881

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 318053

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0013	0.0012	ug/L		04/06/23 12:20	04/11/23 01:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*62*		*20 - 139*	*04/06/23 12:20*	*04/11/23 01:27*	*1*
DCB Decachlorobiphenyl (Surr)	*65*		*20 - 154*	*04/06/23 12:20*	*04/11/23 01:27*	*1*

Lab Sample ID: LCS 570-318053/2-A
Matrix: Water
Analysis Batch: 318881

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 318053

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
alpha-BHC			0.0333	0.0187		ug/L		56	37 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*63*		*20 - 139*
DCB Decachlorobiphenyl (Surr)	*67*		*20 - 154*

Lab Sample ID: LCSD 570-318053/3-A
Matrix: Water
Analysis Batch: 318881

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 318053

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
alpha-BHC			0.0333	0.0210		ug/L		63	37 - 140	11	36

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*64*		*20 - 139*
DCB Decachlorobiphenyl (Surr)	*77*		*20 - 154*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-315976/5
Matrix: Water
Analysis Batch: 315976

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			03/30/23 07:02	1
Nitrate as N	ND		0.10	0.020	mg/L			03/30/23 07:02	1

Lab Sample ID: LCS 570-315976/6
Matrix: Water
Analysis Batch: 315976

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.48		mg/L		99	90 - 110
Nitrate as N	5.00	4.86		mg/L		97	90 - 110

Lab Sample ID: LCSD 570-315976/7
Matrix: Water
Analysis Batch: 315976

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.47		mg/L		99	90 - 110	0	15
Nitrate as N	5.00	4.85		mg/L		97	90 - 110	0	15

Lab Sample ID: MB 570-315977/5
Matrix: Water
Analysis Batch: 315977

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			03/30/23 07:02	1
Sulfate	ND		1.0	0.24	mg/L			03/30/23 07:02	1

Lab Sample ID: LCS 570-315977/6
Matrix: Water
Analysis Batch: 315977

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	48.2		mg/L		96	90 - 110
Sulfate	50.0	48.3		mg/L		97	90 - 110

Lab Sample ID: LCSD 570-315977/7
Matrix: Water
Analysis Batch: 315977

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	48.2		mg/L		96	90 - 110	0	15
Sulfate	50.0	48.2		mg/L		96	90 - 110	0	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-316506/7
Matrix: Water
Analysis Batch: 316506

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/31/23 16:05	1

Lab Sample ID: LCS 570-316506/8
Matrix: Water
Analysis Batch: 316506

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	24.3		ug/L		97	85 - 115

Lab Sample ID: LCSD 570-316506/9
Matrix: Water
Analysis Batch: 316506

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	24.3		ug/L		97	85 - 115	0	15

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-316386/1-A
Matrix: Water
Analysis Batch: 316551

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 316386

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		03/31/23 06:19	03/31/23 11:25	1
Copper	ND		2.0	0.32	ug/L		03/31/23 06:19	03/31/23 11:25	1
Lead	ND		1.0	0.12	ug/L		03/31/23 06:19	03/31/23 11:25	1
Selenium	ND		2.0	0.52	ug/L		03/31/23 06:19	03/31/23 11:25	1
Zinc	ND		20	2.8	ug/L		03/31/23 06:19	03/31/23 11:25	1

Lab Sample ID: LCS 570-316386/2-A
Matrix: Water
Analysis Batch: 316551

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 316386

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	82.0		ug/L		102	85 - 115
Copper	80.0	80.5		ug/L		101	85 - 115
Lead	80.0	82.7		ug/L		103	85 - 115
Selenium	80.0	83.5		ug/L		104	85 - 115
Zinc	80.0	83.7		ug/L		105	85 - 115

Lab Sample ID: LCSD 570-316386/3-A
Matrix: Water
Analysis Batch: 316551

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 316386

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	83.6		ug/L		105	85 - 115	2	20
Copper	80.0	82.4		ug/L		103	85 - 115	2	20
Lead	80.0	83.8		ug/L		105	85 - 115	1	20
Selenium	80.0	84.4		ug/L		106	85 - 115	1	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-316386/3-A
Matrix: Water
Analysis Batch: 316551

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 316386

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Zinc			80.0	84.2		ug/L		105	85 - 115	1	20

Lab Sample ID: 570-133047-1 MS
Matrix: Water
Analysis Batch: 316551

Client Sample ID: Outfall018_20230330_Comp
Prep Type: Total Recoverable
Prep Batch: 316386

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Cadmium	ND		80.0	79.5		ug/L		99	80 - 120		
Copper	1.5	J,DX	80.0	81.0		ug/L		99	80 - 120		
Lead	ND		80.0	79.8		ug/L		100	80 - 120		
Selenium	ND		80.0	80.5		ug/L		101	80 - 120		
Zinc	ND		80.0	81.8		ug/L		102	80 - 120		

Lab Sample ID: 570-133047-1 MSD
Matrix: Water
Analysis Batch: 316551

Client Sample ID: Outfall018_20230330_Comp
Prep Type: Total Recoverable
Prep Batch: 316386

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND		80.0	80.5		ug/L		101	80 - 120	1	20
Copper	1.5	J,DX	80.0	80.4		ug/L		99	80 - 120	1	20
Lead	ND		80.0	81.0		ug/L		101	80 - 120	2	20
Selenium	ND		80.0	80.2		ug/L		100	80 - 120	0	20
Zinc	ND		80.0	82.1		ug/L		103	80 - 120	0	20

Lab Sample ID: MB 570-316389/1-A
Matrix: Water
Analysis Batch: 316490

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L			03/31/23 09:17	1
Copper	ND		2.0	0.32	ug/L			03/31/23 09:17	1
Lead	ND		1.0	0.12	ug/L			03/31/23 09:17	1
Selenium	ND		2.0	0.52	ug/L			03/31/23 09:17	1
Zinc	ND		20	2.8	ug/L			03/31/23 09:17	1

Lab Sample ID: LCS 570-316389/2-A
Matrix: Water
Analysis Batch: 316490

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cadmium			80.0	80.0		ug/L		100	85 - 115		
Copper			80.0	78.8		ug/L		98	85 - 115		
Lead			80.0	80.8		ug/L		101	85 - 115		
Selenium			80.0	77.9		ug/L		97	85 - 115		
Zinc			80.0	78.8		ug/L		98	85 - 115		

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-316389/3-A
Matrix: Water
Analysis Batch: 316490

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium			80.0	80.7		ug/L		101	85 - 115	1	20
Copper			80.0	79.5		ug/L		99	85 - 115	1	20
Lead			80.0	81.9		ug/L		102	85 - 115	1	20
Selenium			80.0	79.2		ug/L		99	85 - 115	2	20
Zinc			80.0	78.2		ug/L		98	85 - 115	1	20

Lab Sample ID: 570-133047-3 MS
Matrix: Water
Analysis Batch: 316490

Client Sample ID: Outfall018_20230330_Comp_F
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	0.25	J,DX BU	80.0	71.7	BU	ug/L		89	80 - 120
Copper	1.6	J,DX BU	80.0	74.1	BU	ug/L		91	80 - 120
Lead	0.35	J,DX BU	80.0	72.9	BU	ug/L		91	80 - 120
Selenium	0.79	J,DX BU	80.0	75.3	BU	ug/L		93	80 - 120
Zinc	ND	BU	80.0	72.2	BU	ug/L		90	80 - 120

Lab Sample ID: 570-133047-3 MSD
Matrix: Water
Analysis Batch: 316490

Client Sample ID: Outfall018_20230330_Comp_F
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	0.25	J,DX BU	80.0	75.1	BU	ug/L		94	80 - 120	5	20
Copper	1.6	J,DX BU	80.0	75.6	BU	ug/L		93	80 - 120	2	20
Lead	0.35	J,DX BU	80.0	75.2	BU	ug/L		94	80 - 120	3	20
Selenium	0.79	J,DX BU	80.0	79.3	BU	ug/L		98	80 - 120	5	20
Zinc	ND	BU	80.0	75.3	BU	ug/L		94	80 - 120	4	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-316587/1-A
Matrix: Water
Analysis Batch: 317032

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 316587

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/31/23 15:48	04/03/23 18:02	1

Lab Sample ID: LCS 570-316587/2-A
Matrix: Water
Analysis Batch: 317032

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 316587

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury			8.00	8.18		ug/L		102	85 - 115

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: LCSD 570-316587/3-A
Matrix: Water
Analysis Batch: 317032
Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 316587

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			8.00	8.43		ug/L		105	85 - 115	3	10

Lab Sample ID: 570-133047-1 MS
Matrix: Water
Analysis Batch: 317032
Client Sample ID: Outfall018_20230330_Comp
Prep Type: Total/NA
Prep Batch: 316587

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	ND		8.00	7.86		ug/L		98	85 - 115		

Lab Sample ID: 570-133047-1 MSD
Matrix: Water
Analysis Batch: 317032
Client Sample ID: Outfall018_20230330_Comp
Prep Type: Total/NA
Prep Batch: 316587

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		8.00	7.58		ug/L		95	85 - 115	4	10

Lab Sample ID: MB 570-316343/1-B
Matrix: Water
Analysis Batch: 317032
Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 316344

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.12	ug/L		03/30/23 23:34	04/03/23 16:29	1

Lab Sample ID: LCS 570-316343/2-B
Matrix: Water
Analysis Batch: 317032
Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 316344

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			8.00	8.36		ug/L		104	85 - 115		

Lab Sample ID: LCSD 570-316343/3-B
Matrix: Water
Analysis Batch: 317032
Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 316344

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			8.00	8.27		ug/L		103	85 - 115	1	10

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-317753/5-A
Matrix: Water
Analysis Batch: 317754
Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 317753

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		04/05/23 11:55	04/05/23 13:28	1

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: LCS 570-317753/6-A
Matrix: Water
Analysis Batch: 317754

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 317753

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Ammonia			0.500	0.483		mg/L		97	90 - 110		

Lab Sample ID: LCSD 570-317753/7-A
Matrix: Water
Analysis Batch: 317754

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 317753

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia			0.500	0.486		mg/L		97	90 - 110	1	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-317039/11
Matrix: Water
Analysis Batch: 317039

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			04/03/23 12:53	1

Lab Sample ID: LCS 570-317039/12
Matrix: Water
Analysis Batch: 317039

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total			250	260		ug/L		104	90 - 110		

Lab Sample ID: LCSD 570-317039/13
Matrix: Water
Analysis Batch: 317039

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total			250	247		ug/L		99	90 - 110	5	20

Lab Sample ID: MRL 570-317039/10
Matrix: Water
Analysis Batch: 317039

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total			5.00	5.08		ug/L		102	50 - 150		

Lab Sample ID: 570-133047-1 MS
Matrix: Water
Analysis Batch: 317039

Client Sample ID: Outfall018_20230330_Comp
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total	ND		250	125	LN	ug/L		50	70 - 130		

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate (Continued)

Lab Sample ID: 570-133047-1 MSD
Matrix: Water
Analysis Batch: 317039

Client Sample ID: Outfall018_20230330_Comp
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	ND		250	167	LN	ug/L		67	70 - 130	29	30

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-316315/1
Matrix: Water
Analysis Batch: 316315

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	1000	1000		NTU		100.0	99.0 - 101.0

Lab Sample ID: LCSSRM 570-316315/2
Matrix: Water
Analysis Batch: 316315

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	10.0	10		NTU		100.0	99.0 - 101.0

Lab Sample ID: LCSSRM 570-316315/3
Matrix: Water
Analysis Batch: 316315

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-316212/1
Matrix: Water
Analysis Batch: 316212

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			03/30/23 16:46	1

Lab Sample ID: LCS 570-316212/2
Matrix: Water
Analysis Batch: 316212

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	1040		mg/L		104	84 - 108

Lab Sample ID: LCSD 570-316212/3
Matrix: Water
Analysis Batch: 316212

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1030		mg/L		103	84 - 108	1	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-317330/1
Matrix: Water
Analysis Batch: 317330

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			04/04/23 13:15	1
Total Suspended Solids	ND		1.0	0.83	mg/L			04/04/23 13:15	1

Lab Sample ID: LCS 570-317330/2
Matrix: Water
Analysis Batch: 317330

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	95.0		mg/L		95	77 - 116
Total Suspended Solids	100	95.0		mg/L		95	77 - 116

Lab Sample ID: LCSD 570-317330/3
Matrix: Water
Analysis Batch: 317330

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	95.0		mg/L		95	77 - 116	0	10
Total Suspended Solids	100	95.0		mg/L		95	77 - 116	0	10

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: LCS 570-316520/2-A
Matrix: Water
Analysis Batch: 317793

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 316520

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	199	188		mg/L		95	84.6 - 115.4

Lab Sample ID: USB 570-317793/2
Matrix: Water
Analysis Batch: 317793

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L			03/31/23 12:19	1

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-316601/5-A
Matrix: Water
Analysis Batch: 316600

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 316601

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.20	0.050	mg/L		03/31/23 15:25	03/31/23 15:50	1

Method: SM 5540C - Methylene Blue Active Substances (MBAS) (Continued)

Lab Sample ID: LCS 570-316601/6-A
Matrix: Water
Analysis Batch: 316600

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 316601

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
MBAS			0.500	0.518		mg/L		104	83 - 122		

Lab Sample ID: LCSD 570-316601/7-A
Matrix: Water
Analysis Batch: 316600

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 316601

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS			0.500	0.531		mg/L		106	83 - 122	3	10

GC/MS Semi VOA

Prep Batch: 317265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	625	
MB 570-317265/1-A	Method Blank	Total/NA	Water	625	
LCS 570-317265/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-317265/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 319424

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	625.1 SIM	317265
MB 570-317265/1-A	Method Blank	Total/NA	Water	625.1 SIM	317265
LCS 570-317265/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	317265
LCSD 570-317265/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	317265

GC Semi VOA

Prep Batch: 318053

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	608	
MB 570-318053/1-A	Method Blank	Total/NA	Water	608	
LCS 570-318053/2-A	Lab Control Sample	Total/NA	Water	608	
LCSD 570-318053/3-A	Lab Control Sample Dup	Total/NA	Water	608	

Analysis Batch: 318881

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	608.3	318053
MB 570-318053/1-A	Method Blank	Total/NA	Water	608.3	318053
LCS 570-318053/2-A	Lab Control Sample	Total/NA	Water	608.3	318053
LCSD 570-318053/3-A	Lab Control Sample Dup	Total/NA	Water	608.3	318053

HPLC/IC

Analysis Batch: 315976

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	300.0	
MB 570-315976/5	Method Blank	Total/NA	Water	300.0	
LCS 570-315976/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-315976/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 315977

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	300.0	
MB 570-315977/5	Method Blank	Total/NA	Water	300.0	
LCS 570-315977/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-315977/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 316506

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	314.0	
MB 570-316506/7	Method Blank	Total/NA	Water	314.0	
LCS 570-316506/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-316506/9	Lab Control Sample Dup	Total/NA	Water	314.0	

HPLC/IC

Analysis Batch: 319249

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	NO2NO3 Calc	

Metals

Filtration Batch: 316343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-3	Outfall018_20230330_Comp_F	Dissolved	Water	Filtration	
MB 570-316343/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-316343/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-316343/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	

Prep Batch: 316344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-3	Outfall018_20230330_Comp_F	Dissolved	Water	245.1	316343
MB 570-316343/1-B	Method Blank	Dissolved	Water	245.1	316343
LCS 570-316343/2-B	Lab Control Sample	Dissolved	Water	245.1	316343
LCSD 570-316343/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	316343

Prep Batch: 316386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total Recoverable	Water	200.8	
MB 570-316386/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-316386/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-316386/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-133047-1 MS	Outfall018_20230330_Comp	Total Recoverable	Water	200.8	
570-133047-1 MSD	Outfall018_20230330_Comp	Total Recoverable	Water	200.8	

Filtration Batch: 316389

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-3	Outfall018_20230330_Comp_F	Dissolved	Water	Filtration	
MB 570-316389/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-316389/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-316389/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-133047-3 MS	Outfall018_20230330_Comp_F	Dissolved	Water	Filtration	
570-133047-3 MSD	Outfall018_20230330_Comp_F	Dissolved	Water	Filtration	

Analysis Batch: 316490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-3	Outfall018_20230330_Comp_F	Dissolved	Water	200.8	316389
MB 570-316389/1-A	Method Blank	Dissolved	Water	200.8	316389
LCS 570-316389/2-A	Lab Control Sample	Dissolved	Water	200.8	316389
LCSD 570-316389/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	316389
570-133047-3 MS	Outfall018_20230330_Comp_F	Dissolved	Water	200.8	316389
570-133047-3 MSD	Outfall018_20230330_Comp_F	Dissolved	Water	200.8	316389

Analysis Batch: 316551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total Recoverable	Water	200.8	316386
MB 570-316386/1-A	Method Blank	Total Recoverable	Water	200.8	316386
LCS 570-316386/2-A	Lab Control Sample	Total Recoverable	Water	200.8	316386

Metals (Continued)

Analysis Batch: 316551 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 570-316386/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	316386
570-133047-1 MS	Outfall018_20230330_Comp	Total Recoverable	Water	200.8	316386
570-133047-1 MSD	Outfall018_20230330_Comp	Total Recoverable	Water	200.8	316386

Prep Batch: 316587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	245.1	
MB 570-316587/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-316587/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-316587/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
570-133047-1 MS	Outfall018_20230330_Comp	Total/NA	Water	245.1	
570-133047-1 MSD	Outfall018_20230330_Comp	Total/NA	Water	245.1	

Analysis Batch: 317032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	245.1	316587
570-133047-3	Outfall018_20230330_Comp_F	Dissolved	Water	245.1	316344
MB 570-316343/1-B	Method Blank	Dissolved	Water	245.1	316344
MB 570-316587/1-A	Method Blank	Total/NA	Water	245.1	316587
LCS 570-316343/2-B	Lab Control Sample	Dissolved	Water	245.1	316344
LCS 570-316587/2-A	Lab Control Sample	Total/NA	Water	245.1	316587
LCSD 570-316343/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	316344
LCSD 570-316587/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	316587
570-133047-1 MS	Outfall018_20230330_Comp	Total/NA	Water	245.1	316587
570-133047-1 MSD	Outfall018_20230330_Comp	Total/NA	Water	245.1	316587

General Chemistry

Analysis Batch: 316212

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	SM 2540C	
MB 570-316212/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-316212/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-316212/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 316315

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	SM 2130B	
LCSSRM 570-316315/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-316315/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-316315/3	Lab Control Sample	Total/NA	Water	SM 2130B	

Prep Batch: 316520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	BOD Prep	
LCS 570-316520/2-A	Lab Control Sample	Total/NA	Water	BOD Prep	

Analysis Batch: 316600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	SM 5540C	316601

General Chemistry (Continued)

Analysis Batch: 316600 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-316601/5-A	Method Blank	Total/NA	Water	SM 5540C	316601
LCS 570-316601/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	316601
LCSD 570-316601/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	316601

Prep Batch: 316601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	SM 5540C	
MB 570-316601/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-316601/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-316601/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	

Analysis Batch: 317039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	Kelada 01	
MB 570-317039/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-317039/12	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-317039/13	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-317039/10	Lab Control Sample	Total/NA	Water	Kelada 01	
570-133047-1 MS	Outfall018_20230330_Comp	Total/NA	Water	Kelada 01	
570-133047-1 MSD	Outfall018_20230330_Comp	Total/NA	Water	Kelada 01	

Analysis Batch: 317330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	SM 2540D	
MB 570-317330/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-317330/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-317330/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Prep Batch: 317753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	Distill/Ammonia	
MB 570-317753/5-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-317753/6-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-317753/7-A	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 317754

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	350.1	317753
MB 570-317753/5-A	Method Blank	Total/NA	Water	350.1	317753
LCS 570-317753/6-A	Lab Control Sample	Total/NA	Water	350.1	317753
LCSD 570-317753/7-A	Lab Control Sample Dup	Total/NA	Water	350.1	317753

Analysis Batch: 317793

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	SM 5210B	316520
USB 570-317793/2	Method Blank	Total/NA	Water	SM 5210B	
LCS 570-316520/2-A	Lab Control Sample	Total/NA	Water	SM 5210B	316520

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Comp

Client Sample ID: Outfall018_20230330_Comp
Date Collected: 03/30/23 08:05
Date Received: 03/30/23 17:10

Lab Sample ID: 570-133047-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			1061.6 mL	2 mL	317265	04/05/23 04:55	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	319424	04/11/23 20:40	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Prep	608			1500 mL	1 mL	318053	04/06/23 12:20	H1SH	EET CAL 4
Total/NA	Analysis	608.3		1	1 mL	1 mL	318881	04/11/23 03:44	N5Y3	EET CAL 4
	Instrument ID: GC54A									
Total/NA	Analysis	300.0		1	4 mL	4 mL	315976	03/31/23 00:20	UIP1	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	300.0		1	4 mL	4 mL	315977	03/31/23 00:20	UIP1	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	314.0		1	4 mL	4 mL	316506	03/31/23 23:44	PS	EET CAL 4
	Instrument ID: IC8									
Total/NA	Analysis	NO2NO3 Calc		1			319249	04/11/23 12:02	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total Recoverable	Prep	200.8			50 mL	50 mL	316386	03/31/23 06:19	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			316551	03/31/23 12:08	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Prep	245.1			25 mL	50 mL	316587	03/31/23 15:48	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			317032	04/03/23 18:22	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	317753	04/05/23 11:55	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	317754	04/05/23 13:58	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	317039	04/03/23 13:16	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			316315	03/30/23 20:46	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	316212	03/30/23 21:00	ZL7L	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	317330	04/04/23 13:15	U7UR	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Prep	BOD Prep					316520	03/31/23 12:23	U7UR	EET CAL 4
Total/NA	Analysis	SM 5210B		1	300 mL	300 mL	317793	03/31/23 13:25	U7UR	EET CAL 4
	Instrument ID: BOD3									
Total/NA	Prep	SM 5540C			100 mL	100 mL	316601	03/31/23 15:25	TXA8	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	316600	03/31/23 15:56	TXA8	EET CAL 4
	Instrument ID: UV8									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Comp

Client Sample ID: Outfall018_20230330_Comp_F
Lab Sample ID: 570-133047-3
Date Collected: 03/30/23 08:05
Matrix: Water
Date Received: 03/30/23 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	316389	03/31/23 06:32	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			316490	03/31/23 09:24	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	316343	03/30/23 23:00	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	316344	03/30/23 23:34	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			317032	04/03/23 16:38	C0YH	EET CAL 4
	Instrument ID: HG8									

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-1
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method	Method Description	Protocol	Laboratory
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
608.3	Organochlorine Pesticides in Water	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 5210B	BOD, 5-Day	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
608	Liquid-Liquid Extraction (Separatory Funnel)	EPA	EET CAL 4
625	Liquid-Liquid Extraction	EPA	EET CAL 4
BOD Prep	Preparation, BOD	SM	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Job ID: 570-133047-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-133047-1	Outfall018_20230330_Comp	Water	03/30/23 08:05	03/30/23 17:10
570-133047-3	Outfall018_20230330_Comp_F	Water	03/30/23 08:05	03/30/23 17:10

133047

Eurofins Calscience Irvine

CHAIN OF CUSTODY FORM

570-133047 Chain of Custody

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	**Project:** Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp
Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 **ECI Project # 57013187**	**Project Manager: Katherine Miller** 520.289.8606, 520.904.6944 (cell)
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	**Field Manager: Mark Dominick** 978.234.5033, 818.599.0702 (cell)
Sampler: michelle dallalah	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R Total Recoverable Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	R TCDD (and all congeners) (E1613B)	R BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	R Surfactants (MBAS) (SM5540C/E425.1)	R Cl-, SO_4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	R Turbidity, TDS (SM2540C/E180.1)	R TSS (160.2 (SM2540D))	R Ammonia-N (350.2)	R alpha-BHC (E608)	R 2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	R Total Recoverable Metals: Mercury (E245.1)	C			Comments
1 Outfall 018	Outfall018_20230330_Comp	3/30/2023 0805	WM	500 mL Poly	1	HNO_3	90	Yes	X										X				
			WM	1 L Glass Amber	2	None	110	No		X													
			WM	1L Poly	1	None	115	No			X												
			WM	500 mL Poly	2	None	120	No				X											
			WM	500 mL Poly	2	None	130	No					X										48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X									48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X							
			WM	1 L Glass Amber	2	None	170	No									X						
			WM	1 L Glass Amber	2	None	180	No										X					
			WM	1L Poly	1	None	185	No							X								
2	Outfall018_20230330_Comp_Extra	3/30/2023 0805	WM	1 L Glass Amber	2	None	110	No		H													Hold
			WM	1 L Glass Amber	2	None	170	No									H						Hold
			WM	1 L Glass Amber	2	None	180	No										H					Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
M Dominick	3-30-2023/1210	H.A		3/30/23 1210 EC
	3/30/23 1710 EC			3/30/23 17:10 EC

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

2.2/2.2 1.8/1.8 SC11

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:	ANALYSIS REQUIRED
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp	R R R R R C
Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 **ECI Project # 57013187**		
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	
Sampler: michelle dallalah	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)		Total Dissolved Metals: Mercury (E245.1)							Comments
3 Outfall 018	Outfall018_20230330_Comp_F	3/30/2023 0905	WM	1L Poly	1	None	200	Yes	X										
			WM	borosilicate vials	2	None	320	No					X						Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
1	Outfall018_20230330_Comp	3/30/2023 0905	WM	500 mL Poly	1	NaOH	220	No		X									
			WM	2.5 Gal Cube	1	None	225	No			X								Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No											

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
M Dominick	3-30-2023/1240	HiA		3/30/23 1210 EC
	3/30/23 1710	EC		

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X____
48 Hour: _____ 5 Day: _____ Normal: _____

Sample integrity: (Check)
Intact: _____ On Ice:_____
Store samples for 6 months.

Data Requirements: (Check)
No Level IV: _____ All Level IV:____X_____

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-214385.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-133047-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 4/19/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall - 018 Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall018_20230330_Comp (570-133047-1)	3/30/23	08:05 Pacific		Water			X		2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.
Outfall018_20230330_Extra (570-133047-2)	3/30/23	08:05 Pacific		Water				X	2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	4/3/23 1357				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-214399.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-133047-3
Address: 13715 Rider Trail North, ,	Due Date Requested: 5/2/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall - 018 Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	906.0/LSC_Dist_Susp Tritium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230330_Comp (570-133047-1)	3/30/23	08:05 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation. Ok to Preserve

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	4/3/23 1417				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-133047-1

Login Number: 133047
List Number: 1
Creator: Patel, Jayesh

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 5/2/2023 2:47:12 PM

JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall - 018 Comp

JOB NUMBER

570-133047-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

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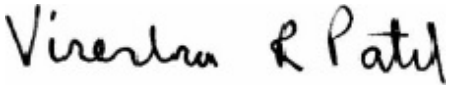
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Qualifiers

Dioxin

Qualifier	Qualifier Description
BA	Relative percent difference out of control
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LR	LCS/LCSD recovery below method control limits
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-133047-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-133047-2

Comments
No additional comments.

Receipt
The samples were received on 3/30/2023 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.2º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: Outfall018_20230330_Comp (570-133047-1), (CCV 320-667684/1), (LCS 320-666843/2-A), (LCSD 320-666843/3-A) and (MB 320-666843/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: Outfall018_20230330_Comp (570-133047-1), (CCV 320-670442/7) and (LCS 320-669114/2-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: (CCV 320-670677/1) and (MB 320-669114/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: Outfall018_20230330_Comp (570-133047-1), (LCS 320-669114/2-A) and (LCSD 320-669114/3-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: The laboratory control sample duplicate (LCSD) for preparation batch 320-669114 and analytical batch 320-670442 recovered outside control limits for several target analytes while the LCS was within limits for all analytes. The data from this analysis is from a re-extraction due to contamination in the Method Blank in the original extraction so there was insufficient sample to perform another re-extraction. The client was notified of the failing LCSD recovery and approved reporting of samples with narration.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Comp

Client Sample ID: Outfall018_20230330_Comp
Lab Sample ID: 570-133047-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.0000021	J,DX LR	0.000047	0.000000012	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000021	J,DX	0.000047	0.000000012	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: Outfall018_20230330_Comp
Date Collected: 03/30/23 08:05
Date Received: 03/30/23 17:10

Lab Sample ID: 570-133047-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000095	0.00000010	ug/L		04/21/23 06:35	04/27/23 03:12	1
2,3,7,8-TCDF	ND	LR	0.0000095	0.00000090	ug/L		04/21/23 06:35	04/27/23 03:12	1
1,2,3,7,8-PeCDD	ND	LR	0.000047	0.00000035	ug/L		04/21/23 06:35	04/27/23 03:12	1
1,2,3,7,8-PeCDF	**0.0000021**	**J,DX LR**	0.000047	0.00000012	ug/L		04/21/23 06:35	04/27/23 03:12	1
2,3,4,7,8-PeCDF	ND	LR	0.000047	0.00000012	ug/L		04/21/23 06:35	04/27/23 03:12	1
1,2,3,4,7,8-HxCDD	ND	LR BA	0.000047	0.00000059	ug/L		04/21/23 06:35	04/27/23 03:12	1
1,2,3,6,7,8-HxCDD	ND	LR BA	0.000047	0.00000062	ug/L		04/21/23 06:35	04/27/23 03:12	1
1,2,3,7,8,9-HxCDD	ND	LR BA	0.000047	0.00000055	ug/L		04/21/23 06:35	04/27/23 03:12	1
1,2,3,4,7,8-HxCDF	ND	LR BA	0.000047	0.0000014	ug/L		04/21/23 06:35	04/27/23 03:12	1
1,2,3,6,7,8-HxCDF	ND	LR BA	0.000047	0.0000013	ug/L		04/21/23 06:35	04/27/23 03:12	1
1,2,3,7,8,9-HxCDF	ND	LR	0.000047	0.0000013	ug/L		04/21/23 06:35	04/27/23 03:12	1
2,3,4,6,7,8-HxCDF	ND	LR	0.000047	0.00000011	ug/L		04/21/23 06:35	04/27/23 03:12	1
1,2,3,4,6,7,8-HpCDD	ND	LR BA	0.000047	0.0000078	ug/L		04/21/23 06:35	04/27/23 03:12	1
1,2,3,4,6,7,8-HpCDF	ND	LR	0.000047	0.0000053	ug/L		04/21/23 06:35	04/27/23 03:12	1
1,2,3,4,7,8,9-HpCDF	ND	LR BA	0.000047	0.0000057	ug/L		04/21/23 06:35	04/27/23 03:12	1
OCDD	ND	LR BA	0.000095	0.0000081	ug/L		04/21/23 06:35	04/27/23 03:12	1
OCDF	ND	LR BA	0.000095	0.0000057	ug/L		04/21/23 06:35	04/27/23 03:12	1
Total TCDD	ND		0.0000095	0.00000010	ug/L		04/21/23 06:35	04/27/23 03:12	1
Total TCDF	ND		0.0000095	0.00000090	ug/L		04/21/23 06:35	04/27/23 03:12	1
Total PeCDD	ND		0.000047	0.00000035	ug/L		04/21/23 06:35	04/27/23 03:12	1
Total PeCDF	**0.0000021**	**J,DX**	0.000047	0.00000012	ug/L		04/21/23 06:35	04/27/23 03:12	1
Total HxCDD	ND		0.000047	0.00000055	ug/L		04/21/23 06:35	04/27/23 03:12	1
Total HxCDF	ND		0.000047	0.00000011	ug/L		04/21/23 06:35	04/27/23 03:12	1
Total HpCDD	ND		0.000047	0.0000078	ug/L		04/21/23 06:35	04/27/23 03:12	1
Total HpCDF	ND		0.000047	0.0000053	ug/L		04/21/23 06:35	04/27/23 03:12	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*78*		*25 - 164*	*04/21/23 06:35*	*04/27/23 03:12*	*1*
13C-2,3,7,8-TCDF	*102*		*24 - 169*	*04/21/23 06:35*	*04/27/23 03:12*	*1*
13C-1,2,3,7,8-PeCDD	*108*		*25 - 181*	*04/21/23 06:35*	*04/27/23 03:12*	*1*
13C-1,2,3,7,8-PeCDF	*93*		*24 - 185*	*04/21/23 06:35*	*04/27/23 03:12*	*1*
13C-2,3,4,7,8-PeCDF	*102*		*21 - 178*	*04/21/23 06:35*	*04/27/23 03:12*	*1*
13C-1,2,3,4,7,8-HxCDD	*77*		*32 - 141*	*04/21/23 06:35*	*04/27/23 03:12*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: Outfall018_20230330_Comp
Lab Sample ID: 570-133047-1
Date Collected: 03/30/23 08:05
Matrix: Water
Date Received: 03/30/23 17:10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,6,7,8-HxCDD	75		28 - 130	04/21/23 06:35	04/27/23 03:12	1
13C-1,2,3,4,7,8-HxCDF	92		26 - 152	04/21/23 06:35	04/27/23 03:12	1
13C-1,2,3,6,7,8-HxCDF	94		26 - 123	04/21/23 06:35	04/27/23 03:12	1
13C-1,2,3,7,8,9-HxCDF	103		29 - 147	04/21/23 06:35	04/27/23 03:12	1
13C-2,3,4,6,7,8-HxCDF	103		28 - 136	04/21/23 06:35	04/27/23 03:12	1
13C-1,2,3,4,6,7,8-HpCDD	65		23 - 140	04/21/23 06:35	04/27/23 03:12	1
13C-1,2,3,4,6,7,8-HpCDF	67		28 - 143	04/21/23 06:35	04/27/23 03:12	1
13C-1,2,3,4,7,8,9-HpCDF	70		26 - 138	04/21/23 06:35	04/27/23 03:12	1
13C-OCDD	19		17 - 157	04/21/23 06:35	04/27/23 03:12	1
13C-OCDF	22		17 - 157	04/21/23 06:35	04/27/23 03:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	101		35 - 197	04/21/23 06:35	04/27/23 03:12	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Comp

Job ID: 570-133047-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (35-197)								
570-133047-1	Outfall018_20230330_Comp	101								
MB 320-669114/1-A	Method Blank	87								

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (31-191)								
LCS 320-669114/2-A	Lab Control Sample	85								
LCSD 320-669114/3-A	Lab Control Sample Dup	78								

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Job ID: 570-133047-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-133047-1	Outfall018_20230330_Comp	78	102	108	93	102	77	75	92
MB 320-669114/1-A	Method Blank	63	54	50	55	52	54	54	57

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-133047-1	Outfall018_20230330_Comp	94	103	103	65	67	70	19	22
MB 320-669114/1-A	Method Blank	56	56	55	61	52	53	68	59

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-669114/2-A	Lab Control Sample	71	74	81	77	78	67	66	70
LCSD 320-669114/3-A	Lab Control Sample Dup	50	65	47	47	56	45	50	41

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-669114/2-A	Lab Control Sample	68	78	77	84	66	77	85	83
LCSD 320-669114/3-A	Lab Control Sample Dup	52	50	53	51	41	47	49	48

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-669114/1-A
Matrix: Water
Analysis Batch: 670677

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 669114

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.000000028	ug/L		04/21/23 06:35	04/27/23 16:27	1
2,3,7,8-TCDF	ND		0.000010	0.000000093	ug/L		04/21/23 06:35	04/27/23 16:27	1
1,2,3,7,8-PeCDD	ND		0.000050	0.000000035	ug/L		04/21/23 06:35	04/27/23 16:27	1
1,2,3,7,8-PeCDF	ND		0.000050	0.00000001 1	ug/L		04/21/23 06:35	04/27/23 16:27	1
2,3,4,7,8-PeCDF	ND		0.000050	0.000000013	ug/L		04/21/23 06:35	04/27/23 16:27	1
1,2,3,4,7,8-HxCDD	ND		0.000050	0.000000012	ug/L		04/21/23 06:35	04/27/23 16:27	1
1,2,3,6,7,8-HxCDD	ND		0.000050	0.000000012	ug/L		04/21/23 06:35	04/27/23 16:27	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.00000001 1	ug/L		04/21/23 06:35	04/27/23 16:27	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.000000073	ug/L		04/21/23 06:35	04/27/23 16:27	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.000000078	ug/L		04/21/23 06:35	04/27/23 16:27	1
1,2,3,7,8,9-HxCDF	ND		0.000050	0.000000084	ug/L		04/21/23 06:35	04/27/23 16:27	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.000000077	ug/L		04/21/23 06:35	04/27/23 16:27	1
1,2,3,4,6,7,8-HpCDD	0.00000230	J,DX	0.000050	0.000000019	ug/L		04/21/23 06:35	04/27/23 16:27	1
1,2,3,4,6,7,8-HpCDF	0.00000127	J,DX q	0.000050	0.000000014	ug/L		04/21/23 06:35	04/27/23 16:27	1
1,2,3,4,7,8,9-HpCDF	0.00000127	J,DX	0.000050	0.000000016	ug/L		04/21/23 06:35	04/27/23 16:27	1
OCDD	0.00000319	J,DX q	0.00010	0.000000013	ug/L		04/21/23 06:35	04/27/23 16:27	1
OCDF	0.00000137	J,DX q	0.00010	0.000000030	ug/L		04/21/23 06:35	04/27/23 16:27	1
Total TCDD	ND		0.000010	0.000000028	ug/L		04/21/23 06:35	04/27/23 16:27	1
Total TCDF	ND		0.000010	0.000000093	ug/L		04/21/23 06:35	04/27/23 16:27	1
Total PeCDD	ND		0.000050	0.000000035	ug/L		04/21/23 06:35	04/27/23 16:27	1
Total PeCDF	ND		0.000050	0.00000001 1	ug/L		04/21/23 06:35	04/27/23 16:27	1
Total HxCDD	ND		0.000050	0.00000001 1	ug/L		04/21/23 06:35	04/27/23 16:27	1
Total HxCDF	ND		0.000050	0.000000073	ug/L		04/21/23 06:35	04/27/23 16:27	1
Total HpCDD	0.00000350	J,DX q	0.000050	0.000000019	ug/L		04/21/23 06:35	04/27/23 16:27	1
Total HpCDF	0.00000255	J,DX q	0.000050	0.000000014	ug/L		04/21/23 06:35	04/27/23 16:27	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*63*		*25 - 164*	*04/21/23 06:35*	*04/27/23 16:27*	*1*
13C-2,3,7,8-TCDF	*54*		*24 - 169*	*04/21/23 06:35*	*04/27/23 16:27*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-669114/1-A
Matrix: Water
Analysis Batch: 670677

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 669114

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDD	50		25 - 181	04/21/23 06:35	04/27/23 16:27	1
13C-1,2,3,7,8-PeCDF	55		24 - 185	04/21/23 06:35	04/27/23 16:27	1
13C-2,3,4,7,8-PeCDF	52		21 - 178	04/21/23 06:35	04/27/23 16:27	1
13C-1,2,3,4,7,8-HxCDD	54		32 - 141	04/21/23 06:35	04/27/23 16:27	1
13C-1,2,3,6,7,8-HxCDD	54		28 - 130	04/21/23 06:35	04/27/23 16:27	1
13C-1,2,3,4,7,8-HxCDF	57		26 - 152	04/21/23 06:35	04/27/23 16:27	1
13C-1,2,3,6,7,8-HxCDF	56		26 - 123	04/21/23 06:35	04/27/23 16:27	1
13C-1,2,3,7,8,9-HxCDF	56		29 - 147	04/21/23 06:35	04/27/23 16:27	1
13C-2,3,4,6,7,8-HxCDF	55		28 - 136	04/21/23 06:35	04/27/23 16:27	1
13C-1,2,3,4,6,7,8-HpCDD	61		23 - 140	04/21/23 06:35	04/27/23 16:27	1
13C-1,2,3,4,6,7,8-HpCDF	52		28 - 143	04/21/23 06:35	04/27/23 16:27	1
13C-1,2,3,4,7,8,9-HpCDF	53		26 - 138	04/21/23 06:35	04/27/23 16:27	1
13C-OCDD	68		17 - 157	04/21/23 06:35	04/27/23 16:27	1
13C-OCDF	59		17 - 157	04/21/23 06:35	04/27/23 16:27	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	87		35 - 197	04/21/23 06:35	04/27/23 16:27	1

Lab Sample ID: LCS 320-669114/2-A
Matrix: Water
Analysis Batch: 670442

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 669114

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000189		ug/L		95	67 - 158
2,3,7,8-TCDF	0.000200	0.000198		ug/L		99	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.000855		ug/L		85	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.000846		ug/L		85	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000851		ug/L		85	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.000863		ug/L		86	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000925		ug/L		93	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000877		ug/L		88	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.000901		ug/L		90	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000909		ug/L		91	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.000863		ug/L		86	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000870		ug/L		87	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.000755		ug/L		76	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.000845		ug/L		85	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000798		ug/L		80	78 - 138
OCDD	0.00200	0.00167		ug/L		83	78 - 144
OCDF	0.00200	0.00165		ug/L		82	63 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	71		20 - 175
13C-2,3,7,8-TCDF	74		22 - 152
13C-1,2,3,7,8-PeCDD	81		21 - 227
13C-1,2,3,7,8-PeCDF	77		21 - 192
13C-2,3,4,7,8-PeCDF	78		13 - 328

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-669114/2-A
Matrix: Water
Analysis Batch: 670442

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 669114

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCDD	67		21 - 193
13C-1,2,3,6,7,8-HxCDD	66		25 - 163
13C-1,2,3,4,7,8-HxCDF	70		19 - 202
13C-1,2,3,6,7,8-HxCDF	68		21 - 159
13C-1,2,3,7,8,9-HxCDF	78		17 - 205
13C-2,3,4,6,7,8-HxCDF	77		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	84		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	66		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	77		20 - 186
13C-OCDD	85		13 - 199
13C-OCDF	83		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	85		31 - 191

Lab Sample ID: LCSD 320-669114/3-A
Matrix: Water
Analysis Batch: 670442

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 669114

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000133	q	ug/L		67	67 - 158	35	50
2,3,7,8-TCDF			0.000200	0.000145	LR	ug/L		73	75 - 158	30	50
1,2,3,7,8-PeCDD			0.00100	0.000655	LR	ug/L		65	70 - 142	27	50
1,2,3,7,8-PeCDF			0.00100	0.000628	LR	ug/L		63	80 - 134	30	50
2,3,4,7,8-PeCDF			0.00100	0.000630	LR	ug/L		63	68 - 160	30	50
1,2,3,4,7,8-HxCDD			0.00100	0.000447	LR BA	ug/L		45	70 - 164	63	50
1,2,3,6,7,8-HxCDD			0.00100	0.000538	LR BA	ug/L		54	76 - 134	53	50
1,2,3,7,8,9-HxCDD			0.00100	0.000487	LR BA	ug/L		49	64 - 162	57	50
1,2,3,4,7,8-HxCDF			0.00100	0.000521	LR BA	ug/L		52	72 - 134	54	50
1,2,3,6,7,8-HxCDF			0.00100	0.000509	LR BA	ug/L		51	84 - 130	56	50
1,2,3,7,8,9-HxCDF			0.00100	0.000536	LR	ug/L		54	78 - 130	47	50
2,3,4,6,7,8-HxCDF			0.00100	0.000552	LR	ug/L		55	70 - 156	45	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000450	LR BA	ug/L		45	70 - 140	51	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.000528	LR	ug/L		53	82 - 122	46	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000460	LR BA	ug/L		46	78 - 138	54	50
OCDD			0.00200	0.000980	LR BA	ug/L		49	78 - 144	52	50
OCDF			0.00200	0.000963	LR BA	ug/L		48	63 - 170	53	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	50		20 - 175
13C-2,3,7,8-TCDF	65		22 - 152
13C-1,2,3,7,8-PeCDD	47		21 - 227
13C-1,2,3,7,8-PeCDF	47		21 - 192
13C-2,3,4,7,8-PeCDF	56		13 - 328
13C-1,2,3,4,7,8-HxCDD	45		21 - 193
13C-1,2,3,6,7,8-HxCDD	50		25 - 163
13C-1,2,3,4,7,8-HxCDF	41		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-669114/3-A
Matrix: Water
Analysis Batch: 670442

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 669114

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	52		21 - 159
13C-1,2,3,7,8,9-HxCDF	50		17 - 205
13C-2,3,4,6,7,8-HxCDF	53		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	51		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	41		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	47		20 - 186
13C-OCDD	49		13 - 199
13C-OCDF	48		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	78		31 - 191

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Comp

Specialty Organics

Prep Batch: 669114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	1613B	
MB 320-669114/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-669114/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-669114/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 670442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	1613B	669114
LCS 320-669114/2-A	Lab Control Sample	Total/NA	Water	1613B	669114
LCSD 320-669114/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	669114

Analysis Batch: 670677

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-669114/1-A	Method Blank	Total/NA	Water	1613B	669114

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Comp

Client Sample ID: Outfall018_20230330_Comp
Lab Sample ID: 570-133047-1
Date Collected: 03/30/23 08:05
Matrix: Water
Date Received: 03/30/23 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			1057.1 mL	20.0 uL	669114	04/21/23 06:35	BLR	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	670442	04/27/23 03:12	GRB	EET SAC
	Instrument ID: DFS 1									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	06-01-23
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-24
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-24
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-24
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	02-28-26
Utah	NELAP	CA000442021-12	02-28-23 *
Virginia	NELAP	460278	03-14-24
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-2
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Job ID: 570-133047-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-133047-1	Outfall018_20230330_Comp	Water	03/30/23 08:05	03/30/23 17:10

CHAIN OF CUSTODY FORM

									R	R	R	R	R	R	R	R	R	R	C			
Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108			Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp						ANALYSIS REQUIRED													
Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 **ECI Project # 57013187**																						
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.			Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)																			
Sampler: michelle dallalah			Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)																			
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Recoverable Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl-, SO_4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	Turbidity, TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)				Comments
1 Outfall 018	Outfall018_20230330_Comp	3/30/2023 0805	WM	500 mL Poly	1	HNO_3	90	Yes	X										X			
			WM	1 L Glass Amber	2	None	110	No		X												
			WM	1L Poly	1	None	115	No			X											
			WM	500 mL Poly	2	None	120	No				X										
			WM	500 mL Poly	2	None	130	No					X									48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X								48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X						
			WM	1 L Glass Amber	2	None	170	No									X					
			WM	1 L Glass Amber	2	None	180	No										X				
			WM	1L Poly	1	None	185	No							X							
2	Outfall018_20230330_Comp_Extra	3/30/2023 0805	WM	1 L Glass Amber	2	None	110	No		H												Hold
			WM	1 L Glass Amber	2	None	170	No									H					Hold
			WM	1 L Glass Amber	2	None	180	No										H				Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
M Dominick	3-30-2023/1210	H.A		3/30/23 1210 EC
	3/30/23 1710 EC			3/30/23 17:10 EC

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

2.2/2.2 1.8/1.8 SC11

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:	ANALYSIS REQUIRED
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp	
Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 **ECI Project # 57013187**		
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	
Sampler: michelle dallalah	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	R: Total Dissolved Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	R: Cyanide (SM4500-CN-E / E335.2)	R: Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)	R:	R: Total Dissolved Metals: Mercury (E245.1)	C						Comments
3	Outfall018_20230330_Comp_F	3/30/2023 0905	WM	1L Poly	1	None	200	Yes	X										
Outfall 018			WM	borosilicate vials	2	None	320	No					X						Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
1	Outfall018_20230330_Comp	3/30/2023 0905	WM	500 mL Poly	1	NaOH	220	No		X									
			WM	2.5 Gal Cube	1	None	225	No			X								Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No											

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:	
M Dominick	3-30-2023/1240	HiA		3/30/23 1210	EC
	3/30/23 1710	EC			

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X____
48 Hour: _____ 5 Day: _____ Normal: _____

Sample integrity: (Check)
Intact: _____ On Ice:_____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV:____X_____

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-214385.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-133047-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 4/19/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall - 018 Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall018_20230330_Comp (570-133047-1)	3/30/23	08:05 Pacific		Water			X		2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.
Outfall018_20230330_Extra (570-133047-2)	3/30/23	08:05 Pacific		Water				X	2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 4/3/23 1357	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-214399.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-133047-3
Address: 13715 Rider Trail North, ,	Due Date Requested: 5/2/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall - 018 Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	906.0/LSC_Dist_Susp Tritium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230330_Comp (570-133047-1)	3/30/23	08:05 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation. Ok to Preserve

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	4/3/23 1417				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-214385.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-133047-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 4/19/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall - 018 Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall018_20230330_Comp (570-133047-1)	3/30/23	08:05 Pacific		Water			X		2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.
Outfall018_20230330_Extra (570-133047-2)	3/30/23	08:05 Pacific		Water				X	2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		4/3/23 1357			4.4.23 950	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: Seal	Cooler Temperature(s) °C and Other Remarks: 2.9c

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-133047-2

Login Number: 133047
List Number: 1
Creator: Patel, Jayesh

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-133047-2

Login Number: 133047
List Number: 3
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 04/04/23 04:13 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.4c 2.9c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing NPDES SSFL - Routine Outfall - 018 Comp

JOB NUMBER

570-133047-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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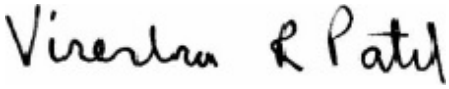
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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5/2/2023 3:32:15 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Qualifiers

Rad

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-133047-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-133047-3

Comments
No additional comments.

Receipt
The samples were received on 3/30/2023 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.2º C.

Receipt Exceptions

The reference method requires samples to have a pH of <2. The following samples were received with a pH of 7: Outfall018_20230330_Comp. The samples were adjusted to the appropriate pH in the laboratory.

RAD
Methods 900.0, 9310: Gross Alpha and Gross Beta batch 608682
The matrix spike (MS) recoveries for Gross Alpha were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.
(570-133047-R-1-H MS)

Methods 900.0, 9310: Gross Alpha and Gross Beta batch 608682
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230330_Comp (570-133047-1), (LCS 160-608682/2-A), (LCSB 160-608682/3-A), (MB 160-608682/1-A), (570-133047-R-1-J DU), (570-133047-R-1-H MS) and (570-133047-R-1-I MSBT)

Method 901.1: Gamma Prep Batch 160-607146
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is

Job ID: 570-133047-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Outfall018_20230330_Comp (570-133047-1), (570-133036-R-1-D) and (570-133036-R-1-F DU)

Methods 903.0, 9315: Radium-226 batch 606633
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230330_Comp (570-133047-1), (LCS 160-606633/2-A), (MB 160-606633/1-A), (310-252375-E-7-A), (310-252375-E-7-B MS) and (310-252375-E-7-C MSD)

Methods 904.0, 9320: Radium-228 batch 606636
The LCS recovered at (129%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCS 160-606636/2-A)

Methods 904.0, 9320: Radium-228 batch 606636
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230330_Comp (570-133047-1), (LCS 160-606636/2-A), (MB 160-606636/1-A), (310-252375-E-7-D), (310-252375-E-7-E MS) and (310-252375-E-7-F MSD)

Method 905: Strontium-90 batch 606565
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230330_Comp (570-133047-1), (LCS 160-606565/2-A), (LCSD 160-606565/3-A) and (MB 160-606565/1-A)

Method 906.0: Tritium 607890
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are decay corrected to sample date and time as the Activity Reference Date. Outfall018_20230330_Comp (570-133047-1), (LCS 160-607890/2-A), (MB 160-607890/1-A), (570-131938-I-1-A), (570-131938-I-1-B DU), (570-132136-Q-1-A) and (570-132136-Q-1-B MS)

Method A-01-R: Isotopic Uranium batch 608325
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Outfall018_20230330_Comp (570-133047-1), (LCS 160-608325/2-A), (MB 160-608325/1-A), (570-133036-R-1-G) and (570-133036-R-1-I DU)

Method PrecSep-7: Strontium-90 Prep Batch 160-606565

Insufficient sample volume was available to perform a sample duplicate for the following samples: Outfall018_20230330_Comp (570-133047-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Client Sample ID: Outfall018_20230330_Comp
Lab Sample ID: 570-133047-1

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: Outfall018_20230330_Comp
Date Collected: 03/30/23 08:05
Date Received: 03/30/23 17:10

Lab Sample ID: 570-133047-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.828	U	1.58	1.58	3.00	2.75	pCi/L	04/25/23 10:49	05/01/23 21:39	1
Gross Beta	**2.06**		0.694	0.724	4.00	0.901	pCi/L	04/25/23 10:49	05/01/23 21:39	1

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: Outfall018_20230330_Comp
Date Collected: 03/30/23 08:05
Date Received: 03/30/23 17:10

Lab Sample ID: 570-133047-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-1.40	U	8.64	8.64	20.0	9.71	pCi/L	04/12/23 12:53	04/18/23 20:25	1
Potassium-40	32.5	U	71.3	71.4		97.9	pCi/L	04/12/23 12:53	04/18/23 20:25	1

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: Outfall018_20230330_Comp
Date Collected: 03/30/23 08:05
Date Received: 03/30/23 17:10

Lab Sample ID: 570-133047-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0869	U	0.176	0.177	1.00	0.313	pCi/L	04/10/23 09:38	05/02/23 08:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.3*		*30 - 110*	*04/10/23 09:38*	*05/02/23 08:04*	*1*

Client Sample Results

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: Outfall018_20230330_Comp
Date Collected: 03/30/23 08:05
Date Received: 03/30/23 17:10

Lab Sample ID: 570-133047-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.260	U	0.360	0.360	1.00	0.604	pCi/L	04/10/23 10:47	05/01/23 12:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.3*		*30 - 110*	*04/10/23 10:47*	*05/01/23 12:37*	*1*
Y Carrier	*83.4*		*30 - 110*	*04/10/23 10:47*	*05/01/23 12:37*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: Outfall018_20230330_Comp
Date Collected: 03/30/23 08:05
Date Received: 03/30/23 17:10

Lab Sample ID: 570-133047-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.228	U	0.228	0.229	3.00	0.456	pCi/L	04/07/23 11:12	04/17/23 19:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*82.4*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:22*	*1*
Y Carrier	*65.4*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:22*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: Outfall018_20230330_Comp
Lab Sample ID: 570-133047-1
Date Collected: 03/30/23 08:05
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-136	U	215	215	500	420	pCi/L	04/18/23 11:12	04/19/23 12:00	1

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: Outfall018_20230330_Comp
Date Collected: 03/30/23 08:05
Date Received: 03/30/23 17:10

Lab Sample ID: 570-133047-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.987		0.315	0.320	1.00	0.155	pCi/L	04/20/23 16:08	04/24/23 23:27	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*77.6*		*30 - 110*	*04/20/23 16:08*	*04/24/23 23:27*	*1*

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-133047-1	Outfall018_20230330_Comp	83.3
LCS 160-606633/2-A	Lab Control Sample	88.6
MB 160-606633/1-A	Method Blank	94.7

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-133047-1	Outfall018_20230330_Comp	83.3	83.4
LCS 160-606636/2-A	Lab Control Sample	88.6	83.7
MB 160-606636/1-A	Method Blank	94.7	80.7

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-133047-1	Outfall018_20230330_Comp	82.4	65.4
LCS 160-606565/2-A	Lab Control Sample	86.3	77.0
LCSD 160-606565/3-A	Lab Control Sample Dup	85.1	69.9
MB 160-606565/1-A	Method Blank	86.6	81.9

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-133047-1	Outfall018_20230330_Comp	77.6
LCS 160-608325/2-A	Lab Control Sample	87.6
MB 160-608325/1-A	Method Blank	81.8

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-608682/1-A
Matrix: Water
Analysis Batch: 609530

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 608682

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.1778	U	0.384	0.385	3.00	0.851	pCi/L	04/25/23 10:49	05/01/23 18:12	1
Gross Beta	-0.3115	U	0.480	0.481	4.00	0.917	pCi/L	04/25/23 10:49	05/01/23 18:12	1

Lab Sample ID: LCS 160-608682/2-A
Matrix: Water
Analysis Batch: 609530

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 608682

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Gross Alpha			50.5	59.06		8.54	3.00	2.81	pCi/L	117	75 - 125		

Lab Sample ID: LCSB 160-608682/3-A
Matrix: Water
Analysis Batch: 609530

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 608682

Analyte			Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Gross Beta			73.3	74.52		7.98	4.00	0.820	pCi/L	102	75 - 125		

Lab Sample ID: 570-133047-1 MS
Matrix: Water
Analysis Batch: 609530

Client Sample ID: Outfall018_20230330_Comp
Prep Type: Total/NA
Prep Batch: 608682

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Gross Alpha	0.828	U	50.5	29.48	F1	5.33	3.00	2.48	pCi/L	57	60 - 140		

Lab Sample ID: 570-133047-1 MSBT
Matrix: Water
Analysis Batch: 609530

Client Sample ID: Outfall018_20230330_Comp
Prep Type: Total/NA
Prep Batch: 608682

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Gross Beta	2.06		73.3	77.12		8.26	4.00	0.969	pCi/L	102	60 - 140		

Lab Sample ID: 570-133047-1 DU
Matrix: Water
Analysis Batch: 609530

Client Sample ID: Outfall018_20230330_Comp
Prep Type: Total/NA
Prep Batch: 608682

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Gross Alpha	0.828	U		1.045	U	1.41	3.00	2.36	pCi/L			0.07	1
Gross Beta	2.06			2.223		0.731	4.00	0.874	pCi/L			0.11	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-607146/1-A
Matrix: Water
Analysis Batch: 608050

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 607146

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-0.2554	U	8.12	8.12	20.0	9.60	pCi/L	04/12/23 12:53	04/19/23 03:12	1
Potassium-40	71.54		67.9	68.4		67.4	pCi/L	04/12/23 12:53	04/19/23 03:12	1

Lab Sample ID: LCS 160-607146/2-A
Matrix: Water
Analysis Batch: 608053

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607146

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	135500		16100		447	pCi/L	100	79 - 121
Cesium-137	40800	41770		4980	20.0	110	pCi/L	102	87 - 115
Cobalt-60	17700	18530		2210		54.0	pCi/L	105	88 - 116

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-606633/1-A
Matrix: Water
Analysis Batch: 609636

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606633

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.03862	U	0.116	0.116	1.00	0.221	pCi/L	04/10/23 09:38	05/02/23 07:58	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.7*		*30 - 110*	*04/10/23 09:38*	*05/02/23 07:58*	*1*

Lab Sample ID: LCS 160-606633/2-A
Matrix: Water
Analysis Batch: 609636

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606633

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	11.00		1.33	1.00	0.198	pCi/L	97	70 - 113

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*88.6*		*30 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-606636/1-A
Matrix: Water
Analysis Batch: 609533

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606636

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.1946	U	0.258	0.258	1.00	0.546	pCi/L	04/10/23 10:47	05/01/23 12:32	1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: MB 160-606636/1-A
Matrix: Water
Analysis Batch: 609533

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606636

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.7		30 - 110	04/10/23 10:47	05/01/23 12:32	1
Y Carrier	80.7		30 - 110	04/10/23 10:47	05/01/23 12:32	1

Lab Sample ID: LCS 160-606636/2-A
Matrix: Water
Analysis Batch: 609533

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606636

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			7.99	10.33		1.40	1.00	0.547	pCi/L	129	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	88.6		30 - 110
Y Carrier	83.7		30 - 110

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-606565/1-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606565

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.1675	U	0.204	0.204	3.00	0.337	pCi/L	04/07/23 11:12	04/17/23 19:03	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	86.6		30 - 110	04/07/23 11:12	04/17/23 19:03	1
Y Carrier	81.9		30 - 110	04/07/23 11:12	04/17/23 19:03	1

Lab Sample ID: LCS 160-606565/2-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606565

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.34	7.570		0.853	3.00	0.305	pCi/L	103	77 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	86.3		30 - 110
Y Carrier	77.0		30 - 110

Method: 905 - Strontium-90 (GFPC) (Continued)

Lab Sample ID: LCSD 160-606565/3-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 606565

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.34	7.501		0.887	3.00	0.401	pCi/L	102	77 - 125	0.04	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*85.1*		*30 - 110*
Y Carrier	*69.9*		*30 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-607890/1-A
Matrix: Water
Analysis Batch: 608161

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 607890

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-102.7	U	224	224	500	433	pCi/L	04/18/23 11:12	04/19/23 06:41	1

Lab Sample ID: LCS 160-607890/2-A
Matrix: Water
Analysis Batch: 608161

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607890

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2090	1604		396	500	420	pCi/L	77	75 - 125		

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-608325/1-A
Matrix: Water
Analysis Batch: 608551

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 608325

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.07277	U	0.1152	0.1153	1.00	0.184	pCi/L	04/20/23 16:08	04/24/23 23:27	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*81.8*		*30 - 110*	*04/20/23 16:08*	*04/24/23 23:27*	*1*

Lab Sample ID: LCS 160-608325/2-A
Matrix: Water
Analysis Batch: 608555

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 608325

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	13.86		1.59	1.00	0.144	pCi/L	109	75 - 125		
Uranium-238			13.0	14.93		1.68	1.00	0.150	pCi/L	115	75 - 125		

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: LCS 160-608325/2-A
Matrix: Water
Analysis Batch: 608555

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 608325

Tracer	LCS %Yield	LCS Qualifier	Limits
Uranium-232	87.6		30 - 110

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Rad

Prep Batch: 606565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	PrecSep-7	
MB 160-606565/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-606565/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-606565/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 606633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	PrecSep-21	
MB 160-606633/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-606633/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 606636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	PrecSep_0	
MB 160-606636/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-606636/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Prep Batch: 607146

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	Fill_Geo-0	
MB 160-607146/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-607146/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 607890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	LSC_Dist_Susp	
MB 160-607890/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-607890/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 608325

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	ExtChrom	
MB 160-608325/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-608325/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 608682

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133047-1	Outfall018_20230330_Comp	Total/NA	Water	Evaporation	
MB 160-608682/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-608682/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-608682/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-133047-1 MS	Outfall018_20230330_Comp	Total/NA	Water	Evaporation	
570-133047-1 MSBT	Outfall018_20230330_Comp	Total/NA	Water	Evaporation	
570-133047-1 DU	Outfall018_20230330_Comp	Total/NA	Water	Evaporation	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018 Comp

Client Sample ID: Outfall018_20230330_Comp
Lab Sample ID: 570-133047-1
Date Collected: 03/30/23 08:05
Matrix: Water
Date Received: 03/30/23 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Evaporation			199.99 mL	1.0 g	608682	04/25/23 10:49	MST	EET SL
Total/NA	Analysis	900.0		1			609530	05/01/23 21:39	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	607146	04/12/23 12:53	AJP	EET SL
Total/NA	Analysis	901.1		1			607900	04/18/23 20:25	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	PrecSep-21			1008.00 mL	1.0 g	606633	04/10/23 09:38	KAC	EET SL
Total/NA	Analysis	903.0		1			609638	05/02/23 08:04	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			1008.00 mL	1.0 g	606636	04/10/23 10:47	KAC	EET SL
Total/NA	Analysis	904.0		1			609531	05/01/23 12:37	FLC	EET SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	PrecSep-7			1008.17 mL	1.0 g	606565	04/07/23 11:12	DJP	EET SL
Total/NA	Analysis	905		1			607834	04/17/23 19:22	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	LSC_Dist_Susp			100.16 mL	1.0 g	607890	04/18/23 11:12	ZR	EET SL
Total/NA	Analysis	906.0		1			608161	04/19/23 12:00	REV	EET SL
	Instrument ID: LSC3180									
Total/NA	Prep	ExtChrom			497.0 mL	1.0 mL	608325	04/20/23 16:08	SEH	EET SL
Total/NA	Analysis	A-01-R		1			608536	04/24/23 23:27	FLC	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	06-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-23
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-133047-3
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy
EPA = US Environmental Protection Agency
None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL - Routine Outfall - 018
Comp

Job ID: 570-133047-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-133047-1	Outfall018_20230330_Comp	Water	03/30/23 08:05	03/30/23 17:10

									R	R	R	R	R	R	R	R	R	R	C			
Client Name/Address: Haley & Aldrich, 5333 Mission Center Rd Suite 300, San Diego, CA 92108									ANALYSIS REQUIRED													
Eurofins Calscience Irvine Contact: Virendra Patel, 2841 Dow Avenue, Suite 100, Tustin, CA 92780, Tel: 949-260-3218, ECI Project # 57013187									Total Recoverable Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	TCDD (and all congeners) (E1613B)	BOD5 (20 degrees C) (E405.1(SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Cl-, SO_4, Nitrate-N, Nitrite-N, NO3+NO2-N, Perchlorate (E300)	Turbidity, TDS (SM2540C/E180.1)	TSS (160.2 (SM2540D))	Ammonia-N (350.2)	alpha-BHC (E608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs E625)	Total Recoverable Metals: Mercury (E245.1)			Comments
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.																						
Sampler: michelle dallalah																						
Project: Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp																						
Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)																						
Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)																						
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD														
1 Outfall 018	Outfall018_20230330_Comp	3/30/2023 0805	WM	500 mL Poly	1	HNO_3	90	Yes	X											X		
			WM	1 L Glass Amber	2	None	110	No		X												
			WM	1L Poly	1	None	115	No			X											
			WM	500 mL Poly	2	None	120	No				X										
			WM	500 mL Poly	2	None	130	No					X									48 hours Holding Time NO_3 & NO_2
			WM	500 mL Poly	1	None	150	No						X								48 hour holding time for turbidity
			WM	500 mL Poly	1	H_2SO_4	160	No								X						
			WM	1 L Glass Amber	2	None	170	No									X					
			WM	1 L Glass Amber	2	None	180	No										X				
			WM	1L Poly	1	None	185	No							X							
2	Outfall018_20230330_Comp_Extra	3/30/2023 0805	WM	1 L Glass Amber	2	None	110	No		H												Hold
			WM	1 L Glass Amber	2	None	170	No									H					Hold
			WM	1 L Glass Amber	2	None	180	No										H				Hold

Legend: C=Conditional, R=Routine

Relinquished By	Date/Time:	Company:	Received By	Date/Time:
M Dominick	3-30-2023/1210	H.A		3/30/23 1210 EC
	3/30/23 1710 EC			3/30/23 17:10 EC

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: __X__
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: _____ On Ice: _____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV: __X__

2.2/2.2 1.8/1.8 SC11

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:	ANALYSIS REQUIRED
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Boeing-SSFL NPDES Permit 2023 Routine Outfall [001, 002, 011, 018] Outfall 018 Comp	R R R R R C
Eurofins Calscience Irvine Contact: Virendra Patel 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Tel: 949-260-3218 **ECI Project # 57013187**		
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.	Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)	
Sampler: michelle dallalah	Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Dissolved Metals: (E200.8): Zn (E200.8): Cu, Pb, Cd, Se	Cyanide (SM4500-CN-E / E335.2)	Gross Alpha(E900.0), Gross Beta(E900.0), Tritium (H-3) (E906.0), Sr-90 (E905.0), Total Combined Radium 226 (E903.0 or E903.1) & Radium 228 (E904.0), Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1)		Total Dissolved Metals: Mercury (E245.1)							Comments
3 Outfall 018	Outfall018_20230330_Comp_F	3/30/2023 0905	WM	1L Poly	1	None	200	Yes	X										
			WM	borosilicate vials	2	None	320	No					X						Sample receiving DO NOT OPEN BAG. Bag to be opened in Mercury Prep using clean procedures.
1	Outfall018_20230330_Comp	3/30/2023 0905	WM	500 mL Poly	1	NaOH	220	No		X									
			WM	2.5 Gal Cube	1	None	225	No			X								Unfiltered and unpreserved analysis. Separate RAD onto another workorder. Analyze duplicate, not MS/MSD.
				1 L Glass Amber	1	None	230	No											

Legend: A=Annual, C=Conditional, EP=Expert Panel, R=Routine, Q=Quarterly, QRSW=Quarterly Receiving Water, S=Semi-Annual

Relinquished By	Date/Time:	Company:	Received By	Date/Time:	
M Dominick	3-30-2023/1240	HiA		3/30/23 1210	EC
	3/30/23 1710	EC			

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: ___X____
48 Hour: _____ 5 Day: _____ Normal: _____

Sample integrity: (Check)
Intact: _____ On Ice:_____
Store samples for 6 months.
Data Requirements: (Check)
No Level IV: _____ All Level IV:____X_____

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-214385.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-133047-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 4/19/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall - 018 Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Outfall018_20230330_Comp (570-133047-1)	3/30/23	08:05 Pacific		Water			X		2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.
Outfall018_20230330_Extra (570-133047-2)	3/30/23	08:05 Pacific		Water				X	2	See QAS, Boeing_w/u to zero, ug/L; Use Boeing glassware.

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	4/3/23 1357				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-214399.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-133047-3
Address: 13715 Rider Trail North, ,	Due Date Requested: 5/2/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall - 018 Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	906.0/LSC_Dist_Susp Tritium	905_Sr90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230330_Comp (570-133047-1)	3/30/23	08:05 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation. Ok to Preserve

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	4/3/23 1417				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-214399.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-133047-3
Address: 13715 Rider Trail North, ,	Due Date Requested: 5/2/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing NPDES SSFL - Routine Outfall - 018 Comp	Project #: 57013187			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	906.0/LSC_Dist_Susp Tritium	905_Sr-90/PrecSep_7 Strontium-90	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	A01R_U/ExtChrom_Actin Total Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall018_20230330_Comp (570-133047-1)	3/30/23	08:05 Pacific		Water			X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation. Ok to Preserve

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by: Fedex	Date/Time: 4/3/23 1417	Company	Received by: FEDEX	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: Oriana Sharkey-Hansler	Date/Time: 4/4/23 0920	Company ETAS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-133047-3

Login Number: 133047
List Number: 1
Creator: Patel, Jayesh

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-133047-3

Login Number: 133047
List Number: 2
Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis
List Creation: 04/04/23 05:58 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

15280 NW 79th Court, Suite 107 Miami Lakes, Florida 33016

CERT#4126.01

Fecal Host Quantification ID Test Results Report

Detection and quantification of the fecal host associated gene biomarker by quantitative Polymerase Chain Reaction (qPCR) DNA analytical technology

ND: Not Dete DNQ: Detected, Not Quantifiable ROQ: Detected, Quantifiable

Submitter: Haley and Aldrich
Report Generated: January 12, 2023

SM #	Sample ID	Date Collected	Time Collected	Analysis Requested	Ct, Rep1	Ct, Rep2	Marker Quantified	Results Qualifier	LOD (Limit of detection)	LOQ (Limit of Quantification)	Result Unit
SM23A04007	Outfall002_20230101_Grab	1/1/2023	9:30 AM	Human_HF183	ND	ND	0.00E+00	ND	1.50E+02	5.00E+02	copies per 100ml
SM23A04008	Outfall009_20230101_Grab	1/1/2023	10:05 AM	Human_HF183	34.71	35.83	1.25E+02	DNQ	1.50E+02	5.00E+02	copies per 100ml

Reported Results Authorized By: Anda Quintero, Quality Manager

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15280 NW 79th Court, Suite 107 Miami Lakes, Florida 33016

ACCREDITED
CERT#4126.01

Fecal Host Quantification ID Test Results Report

Sample Processing and Analysis Information

Submitter: Haley and Aldrich
Report Generated: January 12, 2023

SM #	Sample ID	Analysis Requested	Sample Type	Processed Date	Extraction Date	Analysis Date	Amount Processed	Amount Processed Unit	Extracted DNA/RNA Volume (ul)	PCR Input Volume (ul)	PCR Plate ID	Sample Comments
SM23A04007	Outfall002_20230101_Grab	Human_HF183	Water	1/4/2023	1/9/2023	1/10/2023	100	ml	100	2	20230110_q02	
SM23A04008	Outfall009_20230101_Grab	Human_HF183	Water	1/4/2023	1/9/2023	1/10/2023	100	ml	100	2	20230110_q02	

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15280 NW 79th Court, Suite 107 Miami Lakes, Florida 33016

ACCREDITED
CERT#4126.01

Fecal Host Quantification ID Test Results Report

qPCR Analysis QAQC information

Submitter: Haley and Aldrich
Report Generated: January 12, 2023

Analysis Requested	PCR Plate ID	Y-intercept	Slope	R^2	Efficiency %	NTC1 (no template control)	NTC2 (no template control)	NTC3 (no template control)	Positive control Ct (if applicable)	Comments
Human_HF183	20230110_q02	36.51	-3.39	0.998	97.14	ND	ND	ND		

Reported Results Authorized By: Anda Quintero, Quality Manager

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Laboratory Comments

Submitter: Haley and Aldrich
Report Generated: January 12, 2023

Non-Detect (ND) Results
In sample(s) classified as non-detect, the host-associated fecal gene biomarker(s) was either not detected in test replicates, one replicate was detected at a cycle threshold greater than 35 and the other was not, or one replicate was detected at a cycle threshold less than 35 and the other was not after repeated analysis.

Detected Not Quantified (DNQ) Results
In sample(s) classified as Detected Not Quantified (DNQ), the host-associated fecal biomarker was detected in both test replicates but in quantities below the limit of quantification (LOQ, see below). This result indicates that fecal indicators associated with the respective host was present in the sample(s) but in low concentrations, and the confidence of such quantification will be lower than that declared by the definition of LOQ.

Quantifiable Results (ROQ)
Sample results are within the range of quantification of calibration curves (standard curves) of a validation qPCR method. For most qPCR assays, the range is 1E1 to 1E5 copies/reaction. Copy number measurements reported are relative, not absolute, quantification.

LOD (Limit of Detection, lower)
A general consensus was reached around the definition of the LOD as the lowest amount of analyte, which can be detected with more than a stated percentage of confidence (95%), but, not necessarily quantified as an exact value. It must be noted that LOD is not a limiting value and therefore, that Ct vlaues below the LOD cannot automatically be considered as negative. From the definition of LOD, it is evident that values below LOD are absolutely valid in terms of microornanism prescence. However, the probability of their repeated detection is lower than 95%.

LOQ (Limit of Quantification, lower)
The LOQ was defined as the smallest amount of analyte, which can be measured and quantified with defined precision and accuracy under the experimental conditions by the method under validation. Numerically, the LOQ is defined as the lowest concentration of analyte, which gives a predefined variability (coeffecient of variation, CV) of under 25%.

Inhibition check
A 1:10 dilution of the original sample is analyzed togther each time with the undiluted sample to evaluate the effect of PCR inhibition. If the sample is inhibited, where 1:10 dilution produces a high signal than undiluted sample, the 1:10 dilution results will be used for quantification. The use of 1:10 dilution sample results will be reflected in Analytical Volume(ul). For example, if the analytical volume for undiluted sample is 2ul, the analytical volume for 1:10 dilution will be 0.2ul.

Fecal Reference Samples
The client is encouraged to submit fecal samples from suspected sources in the surrounding area in order to gain a better understanding of the concentration of the host-associated biomarker with the regional population. A more precise interpretation would be available to the client with the submittal of such baseline samples.

Result Interpretations
The presence of the biomarker does not signify the presence or absence of that form of fecal pollution conclusively. The most reliable way to accurately test for contamination is to combine genetic testing with scientifically sound and adequate study design appropriate for the environmental quality questions to be answered or issues to be resolved.

Additional Testing
A portion of all samples has been frozen and will be archived for 3 months. The client is encouraged to perform additional tests on the sample(s) for other hosts suspected of contributing to the fecal contamination.

Qualitification Assay Results (Detected/Non-Detected only)
Such results are only reported as Detected or Non-Detected without quantification. Non-Detected results are defined as stated above, and Detected results are defined as detected Ct in both replicate qPCR reactions.

Limitation of Damages – Repayment of Service Price
It is agreed that in the event of breach of any warranty or breach of contract, or negligence of LuminUltra Technologies Inc, as well as its agents or representatives, the liability of the company shall be limited to the repayment, to the purchaser (submitter), of the individual analysis price paid by him/her to LuminUltra Technologies Inc. The company shall not be liable for any damages, either direct or consequentialLuminUltra Technologies Inc provides analytical services on a PRIME CONTRACT BASIS ONLY. Terms are available upon request. The sample(s) cited in this report may be used for research purposes after an archiving period of 3 months from the date of this report. Research includes, but is not limited to internal validation studies and peer-reviewed research publications. Anonymity of the sample(s), including the exact geographic location will be maintained by assigning an arbitrary internal reference. These anonymous samples will only be grouped by state / province of origin for research purposes. The client must contact LuminUltra Technologies Inc in writing within 10 days from the date of this report if he/she does not wish for their submitted sample(s) to be used for any type of future research.

DNA Analytical Method Explanation
Water Samples: Each submitted water sample is filtered through 0.45 micron membrane filter(s). Each filter is placed in a separate, sterile 2ml disposable tube containing a unique mix of beads and lysis buffer. The sample is homogenized for and the DNA extracted per kit manufacturer's protocol. Devitations to these procedures may occur at the client's request.

Non-Water Samples: Each non-water sample submitted by the client is processed as per internal laboratory extraction procedures. An extracted DNA sample is proceed directly to PCR analysis. Details available upon request.

Amplifications to detect the target gene biomarker were run in a final reaction volume of 20ul sample extract, forward primer, reverse primer, probe and an optimized buffer. All assays are run in duplicate. Quantification is achieved by extrapolating target gene copy numbers from a standard curve generated from serial dilutions of known gene copy numbers.

For quality control purposes, a positive control and a negative control, were run alongside the sample(s) to ensure a properly functioning reaction and reveal any false negatives or false positives.

15280 NW 79th Court, Suite 107 Miami Lakes, Florida 33016

CERT#4126.01

Fecal Host Quantification ID Test Results Report

Detection and quantification of the fecal host associated gene biomarker by quantitative Polymerase Chain Reaction (qPCR) DNA analytical technology

ND: Not Det DNQ: Detected, Not Quantifiable ROQ: Detected, Quantifiable

Submitter: Haley and Aldrich
Report Generated: January 18, 2023

SM #	Sample ID	Date Collected	Time Collected	Analysis Requested	Ct, Rep1	Ct, Rep2	Marker Quantified	Results Qualifier	LOD (Limit of detection)	LOQ (Limit of Quantification)	Result Unit
SM23A09005	Outfall018_20230104_Grab	1/4/2023	2:00 PM	Human_HF183	ND	ND	0.00E+00	ND	1.50E+02	5.00E+02	copies per 100ml
SM23A09006	Outfall001_20230105_Grab	1/5/2023	7:55 AM	Human_HF183	ND	ND	0.00E+00	ND	1.50E+02	5.00E+02	copies per 100ml
SM23A09007	Outfall008_20230105_Grab	1/5/2023	8:50 AM	Human_HF183	35.47	34.51	1.78E+02	DNQ	1.50E+02	5.00E+02	copies per 100ml

Reported Results Authorized By: Anda Quintero, Quality Manager

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15280 NW 79th Court, Suite 107 Miami Lakes, Florida 33016

CERT#4126.01

Fecal Host Quantification ID Test Results Report

Sample Processing and Analysis Information

Submitter: Haley and Aldrich
Report Generated: January 18, 2023

SM #	Sample ID	Analysis Requested	Sample Type	Processed Date	Extraction Date	Analysis Date	Amount Processed	Amount Processed Unit	Extracted DNA/RNA Volume (ul)	PCR Input Volume (ul)	PCR Plate ID	Sample Comments
SM23A09005	Outfall018_20230104_Grab	Human_HF183	Water	1/9/2023	1/18/2023	1/18/2023	100	ml	100	2	20230118_q01	
SM23A09006	Outfall001_20230105_Grab	Human_HF183	Water	1/9/2023	1/18/2023	1/18/2023	100	ml	100	2	20230118_q01	
SM23A09007	Outfall008_20230105_Grab	Human_HF183	Water	1/9/2023	1/18/2023	1/18/2023	100	ml	100	2	20230118_q01	

Reported Results Authorized By: Anda Quintero, Quality Manager

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15280 NW 79th Court, Suite 107 Miami Lakes, Florida 33016

ACCREDITED
CERT#4126.01

Fecal Host Quantification ID Test Results Report

qPCR Analysis QAQC information

Submitter: Haley and Aldrich
Report Generated: January 18, 2023

Analysis Requested	PCR Plate ID	Y-intercept	Slope	R^2	Efficiency %	NTC1 (no template control)	NTC2 (no template control)	NTC3 (no template control)	Positive control Ct (if applicable)	Comments
Human_HF183	20230118_q01	36.79	-3.41	1.000	96.36	ND	ND	ND		

Reported Results Authorized By: Anda Quintero, Quality Manager

Revision 2.2
Effective Date: 11/11/2021

Results reported herein apply only to the sample matrices as received.
Results reported herein relate to the genetic material extracted from the sample matrix processed and included in the analysis.

Laboratory Comments

Submitter: Haley and Aldrich
Report Generated: January 18, 2023

Non-Detect (ND) Results
In sample(s) classified as non-detect, the host-associated fecal gene biomarker(s) was either not detected in test replicates, one replicate was detected at a cycle threshold greater than 35 and the other was not, or one replicate was detected at a cycle threshold less than 35 and the other was not after repeated analysis.

Detected Not Quantified (DNQ) Results
In sample(s) classified as Detected Not Quantified (DNQ), the host-associated fecal biomarker was detected in both test replicates but in quantities below the limit of quantification (LOQ, see below). This result indicates that fecal indicators associated with the respective host was present in the sample(s) but in low concentrations, and the confidence of such quantification will be lower than that declared by the definition of LOQ.

Quantifiable Results (ROQ)
Sample results are within the range of quantification of calibration curves (standard curves) of a validation qPCR method. For most qPCR assays, the range is 1E1 to 1E5 copies/reaction. Copy number measurements reported are relative, not absolute, quantification.

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Inhibition check
A 1:10 dilution of the original sample is analyzed togther each time with the undiluted sample to evaluate the effect of PCR inhibition. If the sample is inhibited, where 1:10 dilution produces a high signal than undiluted sample, the 1:10 dilution results will be used for quantification. The use of 1:10 dilution sample results will be reflected in Analytical Volume(ul). For example, if the analytical volume for undiluted sample is 2ul, the analytical volume for 1:10 dilution will be 0.2ul.

Fecal Reference Samples
The client is encouraged to submit fecal samples from suspected sources in the surrounding area in order to gain a better understanding of the concentration of the host-associated biomarker with the regional population. A more precise interpretation would be available to the client with the submittal of such baseline samples.

Result Interpretations
The presence of the biomarker does not signify the presence or absence of that form of fecal pollution conclusively. The most reliable way to accurately test for contamination is to combine genetic testing with scientifically sound and adequate study design appropriate for the environmental quality questions to be answered or issues to be resolved.

Additional Testing
A portion of all samples has been frozen and will be archived for 3 months. The client is encouraged to perform additional tests on the sample(s) for other hosts suspected of contributing to the fecal contamination.

Qualitification Assay Results (Detected/Non-Detected only)
Such results are only reported as Detected or Non-Detected without quantification. Non-Detected results are defined as stated above, and Detected results are defined as detected Ct in both replicate qPCR reactions.

Limitation of Damages – Repayment of Service Price
It is agreed that in the event of breach of any warranty or breach of contract, or negligence of LuminUltra Technologies Inc, as well as its agents or representatives, the liability of the company shall be limited to the repayment, to the purchaser (submitter), of the individual analysis price paid by him/her to LuminUltra Technologies Inc. The company shall not be liable for any damages, either direct or consequentialLuminUltra Technologies Inc provides analytical services on a PRIME CONTRACT BASIS ONLY. Terms are available upon request. The sample(s) cited in this report may be used for research purposes after an archiving period of 3 months from the date of this report. Research includes, but is not limited to internal validation studies and peer-reviewed research publications. Anonymity of the sample(s), including the exact geographic location will be maintained by assigning an arbitrary internal reference. These anonymous samples will only be grouped by state / province of origin for research purposes. The client must contact LuminUltra Technologies Inc in writing within 10 days from the date of this report if he/she does not wish for their submitted sample(s) to be used for any type of future research.

DNA Analytical Method Explanation
Water Samples: Each submitted water sample is filtered through 0.45 micron membrane filter(s). Each filter is placed in a separate, sterile 2ml disposable tube containing a unique mix of beads and lysis buffer. The sample is homogenized for and the DNA extracted per kit manufacturer's protocol. Devitations to these procedures may occur at the client's request.

Non-Water Samples: Each non-water sample submitted by the client is processed as per internal laboratory extraction procedures. An extracted DNA sample is proceed directly to PCR analysis. Details available upon request.

Amplifications to detect the target gene biomarker were run in a final reaction volume of 20ul sample extract, forward primer, reverse primer, probe and an optimized buffer. All assays are run in duplicate. Quantification is achieved by extrapolating target gene copy numbers from a standard curve generated from serial dilutions of known gene copy numbers.

For quality control purposes, a positive control and a negative control, were run alongside the sample(s) to ensure a properly functioning reaction and reveal any false negatives or false positives.

15280 NW 79th Court, Suite 107 Miami Lakes, Florida 33016

CERT#4126.01

Fecal Host Quantification ID Test Results Report

Detection and quantification of the fecal host associated gene biomarker by quantitative Polymerase Chain Reaction (qPCR) DNA analytical technology

ND: Not Dete DNQ: Detected, Not Quantifiable ROQ: Detected, Quantifiable

Submitter: Haley and Aldrich
Report Generated: January 20, 2023

SM #	Sample ID	Date Collected	Time Collected	Analysis Requested	Ct, Rep1	Ct, Rep2	Marker Quantified	Results Qualifier	LOD (Limit of detection)	LOQ (Limit of Quantification)	Result Unit
SM23A10025	Outfall001_20230109_Grab	1/9/2023	9:55 AM	Human_HF183	35.92	ND	0.00E+00	ND	1.50E+02	5.00E+02	copies per 100ml
SM23A10026	Outfall008_20230109_Grab	1/9/2023	10:30 AM	Human_HF183	ND	ND	0.00E+00	ND	1.50E+02	5.00E+02	copies per 100ml
SM23A10027	Outfall011_20230108_Grab	1/8/2023	4:00 PM	Human_HF183	37.07	36.22	2.58E+01	DNQ	7.50E+01	2.50E+02	copies per 100ml
SM23A10028	Outfall018_20230109_Grab	1/9/2023	8:40 AM	Human_HF183	ND	ND	0.00E+00	ND	1.50E+02	5.00E+02	copies per 100ml

Reported Results Authorized By: Anda Quintero, Quality Manager

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15280 NW 79th Court, Suite 107 Miami Lakes, Florida 33016

CERT#4126.01

Fecal Host Quantification ID Test Results Report

Sample Processing and Analysis Information

Submitter: Haley and Aldrich
Report Generated: January 20, 2023

SM #	Sample ID	Analysis Requested	Sample Type	Processed Date	Extraction Date	Analysis Date	Amount Processed	Amount Processed Unit	Extracted DNA/RNA Volume (ul)	PCR Input Volume (ul)	PCR Plate ID	Sample Comments
SM23A10025	Outfall001_20230109_Grab	Human_HF183	Water	1/10/2023	1/18/2023	1/18/2023	100	ml	100	2	20230118_q01	
SM23A10026	Outfall008_20230109_Grab	Human_HF183	Water	1/10/2023	1/18/2023	1/18/2023	100	ml	100	2	20230118_q01	
SM23A10027	Outfall011_20230108_Grab	Human_HF183	Water	1/10/2023	1/18/2023	1/20/2023	100	ml	100	4	20230120_q03	
SM23A10028	Outfall018_20230109_Grab	Human_HF183	Water	1/10/2023	1/18/2023	1/18/2023	100	ml	100	2	20230118_q01	

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ACCREDITED
CERT#4126.01

Fecal Host Quantification ID Test Results Report

qPCR Analysis QAQC information

Submitter: Haley and Aldrich
Report Generated: January 20, 2023

Analysis Requested	PCR Plate ID	Y-intercept	Slope	R^2	Efficiency %	NTC1 (no template control)	NTC2 (no template control)	NTC3 (no template control)	Positive control Ct (if applicable)	Comments
Human_HF183	20230118_q01	36.79	-3.41	1.000	96.36	ND	ND	ND		
Human_HF183	20230120_q03	36.63	-3.36	1.000	98.63	ND	ND	ND		

Reported Results Authorized By: Anda Quintero, Quality Manager

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Laboratory Comments

Submitter: Haley and Aldrich
Report Generated: January 20, 2023

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Fecal Host Quantification ID Test Results Report

Detection and quantification of the fecal host associated gene biomarker by quantitative Polymerase Chain Reaction (qPCR) DNA analytical technology

ND: Not Dete DNQ: Detected, Not Quantifiable ROQ: Detected, Quantifiable

Submitter: Haley and Aldrich
Report Generated: January 20, 2023

SM #	Sample ID	Date Collected	Time Collected	Analysis Requested	Ct, Rep1	Ct, Rep2	Marker Quantified	Results Qualifier	LOD (Limit of detection)	LOQ (Limit of Quantification)	Result Unit
SM23A11054	Outfall010_20230110_Grab	1/10/2023	8:00 AM	Human_HF183	ND	ND	0.00E+00	ND	1.50E+02	5.00E+02	copies per 100ml

Reported Results Authorized By: Anda Quintero, Quality Manager

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15280 NW 79th Court, Suite 107 Miami Lakes, Florida 33016

CERT#4126.01

Fecal Host Quantification ID Test Results Report

Sample Processing and Analysis Information

Submitter: Haley and Aldrich
Report Generated: January 20, 2023

SM #	Sample ID	Analysis Requested	Sample Type	Processed Date	Extraction Date	Analysis Date	Amount Processed	Amount Processed Unit	Extracted DNA/RNA Volume (ul)	PCR Input Volume (ul)	PCR Plate ID	Sample Comments
SM23A11054	Outfall010_20230110_Grab	Human_HF183	Water	1/11/2023	1/18/2023	1/18/2023	100	ml	100	2	20230118_q01	

Reported Results Authorized By: Anda Quintero, Quality Manager

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ACCREDITED
CERT#4126.01

Fecal Host Quantification ID Test Results Report

qPCR Analysis QAQC information

Submitter: Haley and Aldrich
Report Generated: January 20, 2023

Analysis Requested	PCR Plate ID	Y-intercept	Slope	R^2	Efficiency %	NTC1 (no template control)	NTC2 (no template control)	NTC3 (no template control)	Positive control Ct (if applicable)	Comments
Human_HF183	20230118_q01	36.79	-3.41	1.000	96.36	ND	ND	ND		

Reported Results Authorized By: Anda Quintero, Quality Manager

Results reported herein apply only to the sample matrices as received.
Results reported herein relate to the genetic material extracted from the sample matrix processed and included in the analysis.

Laboratory Comments

Submitter: Haley and Aldrich
Report Generated: January 20, 2023

Non-Detect (ND) Results
In sample(s) classified as non-detect, the host-associated fecal gene biomarker(s) was either not detected in test replicates, one replicate was detected at a cycle threshold greater than 35 and the other was not, or one replicate was detected at a cycle threshold less than 35 and the other was not after repeated analysis.

Detected Not Quantified (DNQ) Results
In sample(s) classified as Detected Not Quantified (DNQ), the host-associated fecal biomarker was detected in both test replicates but in quantities below the limit of quantification (LOQ, see below). This result indicates that fecal indicators associated with the respective host was present in the sample(s) but in low concentrations, and the confidence of such quantification will be lower than that declared by the definition of LOQ.

Quantifiable Results (ROQ)
Sample results are within the range of quantification of calibration curves (standard curves) of a validation qPCR method. For most qPCR assays, the range is 1E1 to 1E5 copies/reaction. Copy number measurements reported are relative, not absolute, quantification.

LOD (Limit of Detection, lower)
A general consensus was reached around the definition of the LOD as the lowest amount of analyte, which can be detected with more than a stated percentage of confidence (95%), but, not necessarily quantified as an exact value. It must be noted that LOD is not a limiting value and therefore, that Ct vlaues below the LOD cannot automatically be considered as negative. From the definition of LOD, it is evident that values below LOD are absolutely valid in terms of microornanism prescence. However, the probability of their repeated detection is lower than 95%.

LOQ (Limit of Quantification, lower)
The LOQ was defined as the smallest amount of analyte, which can be measured and quantified with defined precision and accuracy under the experimental conditions by the method under validation. Numerically, the LOQ is defined as the lowest concentration of analyte, which gives a predefined variability (coeffecient of variation, CV) of under 25%.

Inhibition check
A 1:10 dilution of the original sample is analyzed togther each time with the undiluted sample to evaluate the effect of PCR inhibition. If the sample is inhibited, where 1:10 dilution produces a high signal than undiluted sample, the 1:10 dilution results will be used for quantification. The use of 1:10 dilution sample results will be reflected in Analytical Volume(ul). For example, if the analytical volume for undiluted sample is 2ul, the analytical volume for 1:10 dilution will be 0.2ul.

Fecal Reference Samples
The client is encouraged to submit fecal samples from suspected sources in the surrounding area in order to gain a better understanding of the concentration of the host-associated biomarker with the regional population. A more precise interpretation would be available to the client with the submittal of such baseline samples.

Result Interpretations
The presence of the biomarker does not signify the presence or absence of that form of fecal pollution conclusively. The most reliable way to accurately test for contamination is to combine genetic testing with scientifically sound and adequate study design appropriate for the environmental quality questions to be answered or issues to be resolved.

Additional Testing
A portion of all samples has been frozen and will be archived for 3 months. The client is encouraged to perform additional tests on the sample(s) for other hosts suspected of contributing to the fecal contamination.

Qualitification Assay Results (Detected/Non-Detected only)
Such results are only reported as Detected or Non-Detected without quantification. Non-Detected results are defined as stated above, and Detected results are defined as detected Ct in both replicate qPCR reactions.

Limitation of Damages – Repayment of Service Price
It is agreed that in the event of breach of any warranty or breach of contract, or negligence of LuminUltra Technologies Inc, as well as its agents or representatives, the liability of the company shall be limited to the repayment, to the purchaser (submitter), of the individual analysis price paid by him/her to LuminUltra Technologies Inc. The company shall not be liable for any damages, either direct or consequentialLuminUltra Technologies Inc provides analytical services on a PRIME CONTRACT BASIS ONLY. Terms are available upon request. The sample(s) cited in this report may be used for research purposes after an archiving period of 3 months from the date of this report. Research includes, but is not limited to internal validation studies and peer-reviewed research publications. Anonymity of the sample(s), including the exact geographic location will be maintained by assigning an arbitrary internal reference. These anonymous samples will only be grouped by state / province of origin for research purposes. The client must contact LuminUltra Technologies Inc in writing within 10 days from the date of this report if he/she does not wish for their submitted sample(s) to be used for any type of future research.

DNA Analytical Method Explanation
Water Samples: Each submitted water sample is filtered through 0.45 micron membrane filter(s). Each filter is placed in a separate, sterile 2ml disposable tube containing a unique mix of beads and lysis buffer. The sample is homogenized for and the DNA extracted per kit manufacturer's protocol. Devitations to these procedures may occur at the client's request.

Non-Water Samples: Each non-water sample submitted by the client is processed as per internal laboratory extraction procedures. An extracted DNA sample is proceed directly to PCR analysis. Details available upon request.

Amplifications to detect the target gene biomarker were run in a final reaction volume of 20ul sample extract, forward primer, reverse primer, probe and an optimized buffer. All assays are run in duplicate. Quantification is achieved by extrapolating target gene copy numbers from a standard curve generated from serial dilutions of known gene copy numbers.

For quality control purposes, a positive control and a negative control, were run alongside the sample(s) to ensure a properly functioning reaction and reveal any false negatives or false positives.

Haley & Aldrich, Inc.
600 South Meyer Ave
Suite 100
Tucson, AZ 85701
520.289.8621

Data Usability Summary Report

Project Name: The Boeing Company, Santa Susana Field Laboratory, NPDES

Project Description: First Quarter 2023 Stormwater Samples

Sample Date(s): 2 through 31 January 2023

Analytical Laboratory: Eurofins Calscience, Tustin, CA

Validation Performed by: Kristina Ilina

Validation Reviewed by: Vanessa Godard

Validation Date: 22 February 2023

Haley & Aldrich, Inc. prepared this Data Usability Summary Report (DUSR) to summarize the review and validation of the analytical results for Sample Delivery Group(s) (SDG) listed. This DUSR is organized into the following sections:

1. **Level II, First Quarter 2023**
2. **Explanations**
3. **Glossary**
4. **Abbreviations**
5. **Qualifiers**

References

This data validation and usability assessment was performed per the guidance and requirements established by the United States Environmental Protection Agency (USEPA) using the following reference materials:

- Evaluation of Radiochemical Data Usability by J.G. Paar.
- The project-specific Quality Assurance Project Plan (QAPP), herein referred to as the specified limits (see references section).

Radiological data reported in this sampling event were reported to the Minimum Detectable Concentration (MDC).

Sample data were qualified in accordance with the laboratory's standard operating procedures (SOP). The results presented in each laboratory report were found to be compliant with the data quality objectives (DQO) for the project and therefore usable; any exceptions are noted in the following pages.

1. Level II, First Quarter 2023

1.1 SAMPLE MANAGEMENT

This DUSR summarizes the review of SDG numbers listed in Table 1.

Samples were collected, preserved, and shipped following standard chain of custody (COC) protocol.

- Samples analyses were subcontracted to Eurofins St. Louis - Earth City, Missouri.

Samples were also received appropriately, identified correctly, and analyzed according to the COC.

Analyses were performed on the samples shown in Table 2. Analytical methods performed are displayed in Table 3.

1.2 CASE NARRATIVE

The laboratory report case narrative lists various additional quality control issues such as internal standard exceedances and initial calibration verification (ICV) and/or continuing calibration verification (CCV) exceedances.

The laboratory report case narratives included the issues noted in Table 4.

1.3 HOLDING TIMES/PRESERVATION

The samples arrived at the laboratory at the proper temperature and were prepared and analyzed within the holding time and preservation criteria specified per method protocol.

1.4 REPORTING LIMITS AND SAMPLE DILUTIONS

The MDCs for the samples within this SDG met or were below the minimum reporting limit (RL) requirements specified by the project specific Sampling Analysis Plan. Results qualified with “G” for the samples where MDC is greater than the requested RL are acceptable.

1.5 LABORATORY CONTROL SAMPLES

Refer to section E 1.3. Compounds associated with the laboratory control samples/laboratory control sample duplicates (LCS/LCSD) analyses associated with client samples exhibited recoveries and relative error ratios (RER) within the specified limits with the exceptions noted in Table 5.

1.6 MATRIX SPIKE SAMPLES

Refer to section E 1.4. The following samples were used for matrix spike (MS):

Lab Sample Number	Matrix Spike Client ID	Method(s)
570-122390-2	Outfall002_20230102_Comp	E900
570-123038-2	Outfall018_20230106_Comp	E900
570-123414-1	Outfall002_20230110_Comp	E900, 906.0
570-123670-1	Outfall008_20230111_Comp	E900
570-124230-1	Outfall018_20230115_Comp	E900
570-124392-1	Outfall011_20230117_Comp	E900
570-124868-1	Outfall001_20230120_Comp	E906.0
570-124887-1	Outfall002_20230121_Comp	E900

The MS recoveries were within the specified limits with the following exceptions:

SDG #	Sample Type	Method	Batch ID	Analyte	%R	Qualifier	Affected Samples
5701230385	MS	E900	599058	Gross Alpha	38%	UJ	Outfall018_20230106_Comp
5701234143	MS	E900	598067	Gross Alpha	59%	UJ	Outfall002_20230110_Comp
5701248873	MS	E900	600333	Gross Alpha	41%	UJ	Outfall002_20230121_Comp

1.7 BLANK SAMPLE ANALYSIS

Refer to section E 1.5. Method blank samples had no detections, indicating that no contamination from laboratory activities occurred with the following exceptions:

Batch ID	Analyte Detected in Blank	Concentration (pCi/L)	Qualifier	Affected Samples
160-598317	Total Uranium	0.124	U	570-124392-1
160-598317	Total Uranium	0.124	U	570-124868-1
160-598317	Total Uranium	0.124	U	570-124873-1
160-598317	Total Uranium	0.124	U	570-124887-1
160-596130	Radium-228	0.4466	NA	None, samples are ND
160-596512	Total Uranium	0.1953	NA	None, samples are ND
160-598317	Total Uranium	0.124	NA	None, samples are ND
160-599667	Total Uranium	0.1885	NA	None, samples are ND

1.8 DUPLICATE SAMPLE ANALYSIS

Refer to section E 1.6. The following samples were used for laboratory duplicate analysis and the normalized absolute difference for each sample pair was less than 1.96.

Lab Sample Number	Laboratory Duplicate Sample Client ID	Method(s)
570-122390-2	Outfall002_20230102_Comp	E900, E901.1
570-123038-2	Outfall018_20230106_Comp	E900, E906.0, HASL-300 U Mod
570-123414-1	Outfall002_20230110_Comp	E900
570-123670-1	Outfall008_20230111_Comp	E900
570-124230-1	Outfall018_20230115_Comp	E900, E901.1
570-124392-1	Outfall011_20230117_Comp	E900, E906.0
570-124868-1	Outfall001_20230120_Comp	E901.1
570-124887-1	Outfall002_20230121_Comp	E900
570-124898-1	Outfall018_20230121_Comp	HASL-300 U Mod

1.9 PRECISION AND ACCURACY

Refer to section E 1.7. Where required by the method, some measurement of analytical accuracy and precision was reported for each method with the site samples.

1.10 CHEMICAL YIELD – TRACERS AND CARRIERS

Refer to section E 1.25. The reviewer verified that at least one carrier or tracer was reported per sample and that percent yields were within the laboratory control limits.

1.11 SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The results presented in this report were found to comply with the DQOs for the project and the guidelines specified by the analytical method. Based on the review of this report, the data are useable and acceptable as no data was rejected. A summary of qualifiers applied to this data set is shown in Table 6.

2. Explanations

The following explanations include more detailed information regarding each of the sections in the DUSR above. Not all sections in the Explanations are represented:

- E 1.3 Laboratory Control Samples
  - The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) analyses are used to assess the precision and accuracy of the analytical method independent of matrix interferences.
  - For radiological isotope data, the normalized difference was calculated between the spike result and the expected value to determine if the results differed significantly when compared to their respective TPU.
- E 1.4 Matrix Spike Samples
  - Matrix spike/matrix spike duplicate (MS/MSD) data are used to assess the precision and accuracy of the analytical method and evaluate the effects of the sample matrix on the sample preparation procedures and measurement methodologies.
  - For radiological isotope data, the normalized difference was calculated between the spike result and the expected value to determine if the results differed significantly when compared to their respective TPU.
- E 1.5 Blank Sample Analysis
  - Method blanks are prepared by the analytical laboratory and analyzed concurrently with the project samples to assess possible laboratory contamination.
  - No statistical evaluation of radiological isotope method blanks needs to be performed if either of the following conditions are met:
    - Method blank is less than its MDC or less than its 2s counting uncertainty.
    - Method blank result is greater than its MDC with the sample result less than its MDC.
- E 1.6 Laboratory and Field Duplicate Sample Analysis
  - The laboratory duplicate sample analysis is used by the laboratory at the time of the analysis to demonstrate acceptable method precision. The percent recovery and relative error ratios (RER) were evaluated for each duplicate sample pair to monitor the reproducibility of the data.

- E 1.7 Precision and Accuracy
  - Precision measures the reproducibility of repetitive measurements. In a laboratory environment, this will be measured by determining the relative percent difference (RPD) found between a primary and a duplicate sample. This can be an LCS/LCSD pair, a MS/MSD pair, a laboratory duplicate performed on a site sample, or a field duplicate collected and analyzed concurrently with a site sample.
  - Accuracy is a statistical measurement of the correctness of a measured value and includes components of random error (variability caused by imprecision) and systematic error. In a laboratory environment, this will be measured by determining the percent recovery (%R) of certain spiked compounds. This can be assessed using LCS, blank spike (BS), MS, and/or surrogate recoveries.
- E 1.25 Chemical Yield
  - Tracers and carriers are used in radiochemical separations methods to evaluate chemical separation. Chemical yield is evaluated by recovering the chemical species spiked into samples. Yield is evaluated radiometrically with a tracer and gravimetrically with a carrier. Each sample is spiked with either a carrier or tracer, and sample results are adjusted for yields greater or less than 100 percent. A low yield indicates tracer losses and radionuclide of interest through sample separation. A high yield indicates instrumental problems or contamination.

3. Glossary

Not all of the following symbols, acronyms, or qualifiers occur in this document.

- Sample Types:
  - EB Equipment Blank Sample
  - FB Field Blank Sample
  - FD Field Duplicate Sample
  - N Primary Sample
  - TB Trip Blank Sample
- Units:
  - % SURVIVAL percent survival
  - µg/L microgram per liter
  - mg/kg milligrams per kilogram
  - mg/L milligram per liter
  - mL/L milliliters per liter
  - mpn/100mL most probable number per 100 milliliters
  - NTU nephelometric turbidity unit
  - pCi/L picocuries per liter
  - umhos/cm micromhos per centimeter
- Matrices:
  - WM Stormwater
  - WMQ Water Quality control matrix
- Table Footnotes:
  - NA Not applicable
  - ND Non-detect
  - NR Not reported
- Common Symbols:
  - % percent
  - < less than
  - ≤ less than or equal to
  - > greater than
  - ≥ greater than or equal to
  - = equal
  - °C degrees Celsius
  - ± plus or minus
  - ~ approximately
  - x times (multiplier)
- Fractions:
  - D Dissolved (filtered)
  - N Normal (method cannot be filtered)
  - T Total (unfiltered)

4. Abbreviations

%D	Percent Difference
%R	Percent Recovery
%RSD	Percent Relative Standard Deviation
2s	2 sigma
4,4-DDT	4 4-dichlorodiphenyltrichloroethane
Abs Diff	Absolute Difference
amu	atomic mass unit
BPJ	Best Professional Judgement
BS	Blank Spike
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CCVL	Continuing Calibration Verification Low
COC	Chain of Custody
COM	Combined Isotope Calculation
Cr (VI)	Hexavalent Chromium
CRI	Collision Reaction Interface
DQO	data quality objective
DUSR	Data Usability Summary Report
EMPC	Estimated Maximum Possible Concentration
FBK	Field Blank Contamination
FDP	Field Duplicate
GC	Gas Chromatograph
GC/MS	Gas Chromatography/Mass Spectrometry
GPC	Gel Permeation Chromatography
HCl	Hydrochloric Acid
ICAL	Initial Calibration
ICB	Initial Calibration Blank
ICP/MS	Inductively Coupled Plasma/ Mass Spectrometry
ICV	Initial Calibration Verification
ICVL	Initial Calibration Verification Low
IPA	Isopropyl Alcohol
LC	Laboratory Control
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate
MDC	Minimum Detectable Concentration
MDL	Laboratory Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NFG	National Functional Guidelines
NH_3	Ammonia
PCB	Polychlorinated Biphenyl
PDS	Post Digestion Spike
PEM	Performance Evaluation Mixture
QAPP	Quality Assurance Project Plan
QC	Quality Control
QSM	Quality Systems Manual
R^2	R-squared value
Ra-226	Radium-226
Ra-228	Radium-228
RESC	Resolution Check Measure
RER	Relative Error Ratio
RL	Laboratory Reporting Limit
RPD	Relative Percent Difference
RRF	Relative Response Factors
RT	Retention Time
SAP	sampling analysis plan
SDG	Sample Delivery Group
SIM	Selected ion monitoring
SOP	Laboratory Standard Operating Procedures
SPE	Solid Phase Extraction
SVOC	Semi-Volatile Organic Compounds
TIC	Tentatively Identified Compound
TKN	Total Kjeldahl Nitrogen
TPH	Total Petroleum Hydrocarbon
TPU	Total Propagated Uncertainty
amu	atomic mass unit
USEPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compounds

5. Qualifiers

The qualifiers below are from the USEPA National Functional Guidelines and the data in the DUSR may contain these qualifiers:

- Laboratory Qualifiers:

BA	Relative percent difference out of control.
BU	Analyzed out of holding time.
BV	Sample received after holding time expired.
EY	Result exceeds normal dynamic range; reported as a minimum estimate.
F1	MS and/or MSD recovery exceeds control limits.
G	The Sample MDC is greater than the requested RL.
J,DX	Results found between the EDL or MDL and laboratory RL.
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS).
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS).
LQ	LCS/LCSD recovery above method control limits.
MB	Analyte present in the method blank.
PI	Primary and confirm results varied by > than 40% RPD.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio; the measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.
U	Result is less than the sample detection limit.

- Validation Notes:

--	Based on validation of the data, a qualifier was not required.
*1	Improper preservation of sample.
*III	Unusual problems found with the data that have been described in the validation report.
B	Laboratory method blank contamination.
D	The analysis with this flag should not be used because another more technically sound analysis is available.
DNQ	Detected but not quantified (constituent value greater than or equal to the laboratory method detection limit and less than the laboratory reporting limit).
E	Duplicates show poor agreement.
H	Holding times were exceeded.
L1	Laboratory control standard (LCS)/laboratory control standard duplicate (LCSD), relative percent difference (RPD) was outside the control limit.
Q	Matrix spike (MS) recovery outside of control limits.
RPD	Pesticides and PCB Confirmation Column RPD Exceeded.

- Validation Qualifiers:

=	No Qualifier.
J	The compound was positively identified; however, the associated numerical value is an estimated concentration only.
J-	The result is an estimated quantity, but the result may be biased low.
J+	The result is an estimated quantity, but the result may be biased high.
R	The sample results were rejected as unusable; the compound may or may not be present in the sample.
U	The compound was analyzed for but not detected. The associated value is either the compound quantitation limit if not detected by the analytical instrument or could be the reported or blank concentration if qualified by blank contamination. This can also be displayed as less than the associated compound quantitation limit (<RL or <MDL), or “ND”.
UJ	The compound was not detected above the reported sample quantitation limit; however, the reported limit is estimated and may or may not represent the actual limit of quantitation.

References

1. J.G. Paar, 1997. Evaluation of Radiochemical Data Usability. April 1997.
2. Haley & Aldrich, Inc, 2015. Quality Assurance Project Field Plan for Santa Susana Field Laboratory Stormwater Sampling Program. December.

TABLE 1

SDGS SUMMARY

THE BOEING COMPANY

SANTA SUSANA FIELD LABORATORY

SDG#
5701223814
5701223905
5701229454
5701229593
5701230164
5701230385
5701233915
5701233934
5701234143
5701236503
5701236534
5701236653
5701236704
5701242303
5701242334
5701242394
5701242433
5701242473
5701243923
5701248683
5701248733
5701248873
5701248903
5701248913
5701248983
5701258393
5701258403

TABLE 2
SAMPLE MANAGEMENT
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Sample ID	Sample Type	Lab ID	Sample Date	Matrix	Methods
Outfall009_20230102_Comp	N	570-122381-1	1/2/2023	WM	A, B, C, D, E, F, G
Outfall002_20230102_Comp	N	570-122390-2	1/2/2023	WM	A, B, C, D, E, F, G
Outfall008_20230106_Comp	N	570-122945-1	1/6/2023	WM	A, B, C, D, E, F, G
Outfall002_20230106_Comp	N	570-122959-1	1/6/2023	WM	A, B, C, D, E, F, G
Outfall001_20230106_Comp	N	570-123016-1	1/6/2023	WM	A, B, C, D, E, F, G
Outfall018_20230106_Comp	N	570-123038-2	1/6/2023	WM	A, B, C, D, E, F, G
Outfall011_20230110_Comp	N	570-123391-2	1/10/2023	WM	A, B, C, D, E, F, G
Outfall009_20230110_Comp	N	570-123393-1	1/10/2023	WM	A, B, C, D, E, F, G
Outfall002_20230110_Comp	N	570-123414-1	1/10/2023	WM	A, B, C, D, E, F, G
Outfall001_20230111_Comp	N	570-123650-1	1/11/2023	WM	A, B, C, D, E, F, G
Outfall010_20230111_Comp	N	570-123653-1	1/11/2023	WM	A, B, C, D, E, F, G
Outfall018_20230111_Comp	N	570-123665-1	1/11/2023	WM	A, B, C, D, E, F, G
Outfall008_20230111_Comp	N	570-123670-1	1/11/2023	WM	A, B, C, D, E, F, G
Outfall018_20230115_Comp	N	570-124230-1	1/15/2023	WM	A, B, C, D, E, F, G
Outfall008_20230115_Comp	N	570-124233-1	1/15/2023	WM	A, B, C, D, E, F, G
Outfall009_20230115_Comp	N	570-124239-1	1/15/2023	WM	A, B, C, D, E, F, G
Outfall001_20230115_Comp	N	570-124243-1	1/15/2023	WM	A, B, C, D, E, F, G
Outfall002_20230115_Comp	N	570-124247-1	1/15/2023	WM	A, B, C, D, E, F, G
Outfall011_20230117_Comp	N	570-124392-1	1/17/2023	WM	A, B, C, D, E, F, G
Outfall001_20230120_Comp	N	570-124868-1	1/20/2023	WM	A, B, C, D, E, F, G
Outfall002_20230121_Comp	N	570-124887-1	1/21/2023	WM	A, B, C, D, E, F, G
Outfall008_20230121_Comp	N	570-124890-1	1/21/2023	WM	A, B, C, D, E, F, G
Outfall009_20230121_Comp	N	570-124891-1	1/21/2023	WM	A, B, C, D, E, F, G
Outfall018_20230121_Comp	N	570-124898-1	1/21/2023	WM	A, B, C, D, E, F, G
Outfall011_20230120_Comp	N	570-124873-1	1/20/2023	WM	A, B, C, D, E, F, G
Outfall009_20230131_Comp	N	570-125839-1	1/31/2023	WM	A, B, C, D, E, F, G
Outfall002_20230131_Comp	N	570-125840-1	1/31/2023	WM	A, B, C, D, E, F, G

TABLE 3

METHOD HOLDING TIMES

THE BOEING COMPANY

SANTA SUSANA FIELD LABORATORY

Method Holding Times			
A	E900	GROSS ALPHA AND GROSS BETA RADIOACTIVITY IN DRINKING WATER	180 days, unpreserved*
B	E901.1	GAMMA EMITTING RADIONUCLIDES IN DRINKING WATER	180 days, unpreserved*
C	E903.0	ALPHA-EMITTING RADIUM ISOTOPES IN DRINKING WATER	180 days, unpreserved*
D	E904.0	RADIUM-228 IN DRINKING WATER	180 days, unpreserved*
E	E905.0	RADIOACTIVE STRONTIUM IN DRINKING WATER	180 days, unpreserved*
F	E906.0	TRITIUM IN DRINKING WATER	180 days, unpreserved
G	HASL-300 U Mod	ISOTOPIC URANIUM IN BIOLOGICAL AND ENVIRONMENTAL MATERIALS	180 days, unpreserved*

Notes:

** preserved to correct pH at the laboratory.*

TABLE 4
CASE NARRATIVE
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Method	Analyte	Batch	Affected Samples	Case Narrative
E900	Gross Alpha and Gross Beta	Batch 598185	570-124247-1	The detection goal was not met for the following sample(s). The samples and batch QC were prepped at full volume. Matrix interferences are suspected because the method blank ach eved the detection goal demonstrating acceptable sample preparation and instrument performance. Analytical results are reported with the detection limit achieved.
E900	Gross Alpha and Gross Beta	Batch 599624	570-125839-1	
E903.0	Radium-226	Prep Batch 160-597480	570-124230-1 570-124233-1 570-124239-1 570-124243-1 570-124247-1	The following sample was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.
E903.0	Radium-226	Prep Batch 160-598272	570-124868-1 570-124873-1 570-124887-1 570-124890-1 570-124891-1	The following sample was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.
E903.0	Radium-226	Prep Batch 160-598272	570-124868-1 570-124873-1 570-124887-1 570-124890-1 570-124891-1 570-124898-1	Insufficient sample volume was available to perform a sample duplicate for the following samples. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.
E904.0	Radium-228	Prep Batch 160-596130	570-122390-2	The sample did not meet the requested limit (RL) due to the reduced sample volume attributed to the presence of matrix interference. During preparation the analyst visually noted matrix effects.
E904.0	Radium-228	Prep Batch 160-596471	570-122945-1 570-123016-1 570-122959-1	
E904.0	Radium-228	Prep Batch 160-596471	570-122945-1 570-123016-1 570-122959-1	The samples was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.
E904.0	Radium-228	Prep Batch 160-596471	570-123038-2	The detection goal was not met. The samples and batch QC were prepped at full volume. Matrix interferences are suspected because the method blank achieved the detection goal demonstrating acceptable sample preparation and instrument performance. Analytical results are reported with the detection limit achieved.
E904.0	Radium-228	Batch 597487	570-124233-1 570-124243-1 570-124247-1	The detection goal was not met for the following sample(s). Sample was prepped at a reduced volume due to the presence of matrix interferences. Analytical results are reported with the detection limit achieved.
E904.0	Radium-228	Batch 597622	570-124392-1	The detection goal was not met for the following sample(s). Sample was prepped at a reduced volume due to the presence of matrix interferences. Analytical results are reported with the detection limit achieved.
E904.0	Radium-228	Prep Batch 160-597175	570-123650-1 570-123653-1 570-123670-1	The detection goal was not met for the following sample(s). Sample was prepped at a reduced volume due to the presence of matrix interferences. Analytical results are reported with the detection limit achieved.
E904.0	Radium-228	Prep Batch 160-597175	570-123391-2 570-123650-1 570-123653-1 570-123670-1	The following sample was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method	Analyte	Batch	Affected Samples	Case Narrative
E904.0	Radium-228	Prep Batch 160-597154	570-123391-2 570-123650-1 570-123653-1 570-123670-1	The following sample was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.
E904.0	Radium-228	Prep Batch 160-597487	570-124230-1 570-124233-1 570-124239-1 570-124243-1 570-124247-1	The following sample was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.
E904.0	Radium-228	Prep Batch 160-598275	570-124868-1 570-124873-1 570-124887-1 570-124890-1 570-124891-1	The following sample was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.
E904.0	Radium-228	Prep Batch 160-598275	570-124868-1 570-124873-1 570-124887-1 570-124890-1 570-124891-1 570-124898-1	Insufficient sample volume was available to perform a sample duplicate for the following samples. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.
E905.0	Strontium-90	Prep Batch 160-597176	570-123391-2 570-123650-1 570-123653-1 570-123670-1	The following sample was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.
E905.0	Strontium-90	Prep Batch 160-597060	570-123393-1 570-123414-1	The following sample was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.
E905.0	Strontium-90	Prep Batch 160-597465	570-124230-1 570-124233-1 570-124239-1 570-124243-1 570-124247-1	The following sample was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.
E905.0	Strontium-90	Prep Batch 160-597624	570-124392-1	The following sample was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.
E905.0	Strontium-90	Prep Batch 160-598546	570-124868-1 570-124873-1 570-124890-1 570-124891-1	The following sample was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.
E905.0	Strontium-90	Prep Batch 160-600473	570-125839-1 570-125840-1	The following sample was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.
E905.0	Strontium-90	Prep Batch 160-597060	570-123393-1 570-123414-1	Insufficient sample volume was available to perform a sample duplicate for the following samples. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method	Analyte	Batch	Affected Samples	Case Narrative
E905.0	Strontium-90	Prep Batch 160-598546	570-124868-1 570-124873-1 570-124887-1 570-124890-1 570-124891-1 570-124898-1	Insufficient sample volume was available to perform a sample duplicate for the following samples. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.
E905.0	Strontium-90	Prep Batch 160-600473	570-125839-1	The carrier recovery is outside lower control limit (40 percent) but in lab's limits (30 to 110 percent). The QC samples associated with the batch have acceptable carrier recovery indicating the presence of matrix interference.
E905.0	Strontium-90	Prep Batch 160-600473	570-125840-1	The sample counted on a detector that failed the beta daily (check). The efficiency is set at 3 percent and the check efficiency was 3.3 percent.The daily (check) run the day prior to and following the sample count, passed. Additionally the affected sample achieved its detection goal and had activity well below the MDC. The potential for bias is so minimal that the lab does not believe it to negatively impact the data being reported.
HASL-300 U Mod	Uranium	Prep Batch 160-597259	570-123391-2 570-123393-1 570-123650-1 570-123653-1 570-123670-1 570-122945-1 570-122959-1 570-123016-1	The sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels
HASL-300 U Mod	Uranium	Prep Batch 160-596512	570-122381-1 570-122390-2	The sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels
HASL-300 U Mod	Uranium	Prep Batch 160-597538	570-124233-1 570-124239-1 570-124243-1 570-124247-1	The sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels
HASL-300 U Mod	Uranium	Prep Batch 160-598317	570-124392-1 570-124868-1 570-124873-1 570-124890-1 570-124891-1	The sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels
HASL-300 U Mod	Uranium	Prep Batch 160-599667	570-125840-1	The sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels

TABLE 5
LCS/LCSD
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG #	Sample Type	Method	Batch ID	Analyte	%R/RPD	Qualifier	Affected Samples
5701233915 5701236503 5701236534 5701236653 5701236704	LCSD	E904.0	Prep Batch 597175	Radium-228	126%	None	None, samples are ND
5701229454 5701230385 5701229593	LCSD	E904.0	Prep Batch 596471	Radium-228	128%	None	570-122959-1 No qualification necessary as the sample is held to laboratory in-house statistical limits of (62-148%) per method requirements.
5701242303 5701242334 5701242394 5701242433 5701242473	LCS/LCSD	E904.0	Prep Batch 597487	Radium-228	142%/135%	None	570-124239-1 No qualification necessary as the sample is held to laboratory in-house statistical limits of (62-148%) per method requirements.
5701243923	LCS	E904.0	Prep Batch 597622	Radium-228	126%	None	570-124392-1 No qualification necessary as the sample is held to laboratory in-house statistical limits of (62-148%) per method requirements.
5701248683 5701248733 5701248873 5701248903 5701248913 5701248983	LCS/LCSD	E904.0	Prep Batch 598275	Radium-228	131%/129%	None	570-124868-1; 570-124873-1 No qualification necessary as the sample is held to laboratory in-house statistical limits of (62-148%) per method requirements.

TABLE 6
SYSTEM PERFORMANCE SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701230385	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E900	Gross Alpha Analytes	1.45	U	UJ	Q	pCi/L	
5701234143	OUTFALL 002	Outfall002_20230110_Comp	1/10/2023	570-123414-1	E900	Gross Alpha Analytes	0.721	U	UJ	Q	pCi/L	
5701243923	OUTFALL 011	Outfall011_20230117_Comp	1/17/2023	570-124392-1	HASL-300 U Mod	Total Uranium	0.49		U	B	pCi/L	Report ND at sample concentration
5701248683	OUTFALL 001	Outfall001_20230120_Comp	1/20/2023	570-124868-1	HASL-300 U Mod	Total Uranium	0.756		U	B	pCi/L	Report ND at sample concentration
5701248733	OUTFALL 011	Outfall011_20230120_Comp	1/20/2023	570-124873-1	HASL-300 U Mod	Total Uranium	0.314		U	B	pCi/L	Report ND at sample concentration
5701248873	OUTFALL 002	Outfall002_20230121_Comp	1/21/2023	570-124887-1	E900	Gross Alpha Analytes	0.648	U	UJ	Q	pCi/L	
5701248873	OUTFALL 002	Outfall002_20230121_Comp	1/21/2023	570-124887-1	HASL-300 U Mod	Total Uranium	0.388		U	B	pCi/L	Report ND at sample concentration

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Data Usability Summary Report

Project Name: The Boeing Company, Santa Susana Field Laboratory, NPDES

Project Description: First Quarter 2023 Stormwater Samples

Sample Date(s): 25 February through 16 March 2023

Analytical Laboratory: Eurofins Calscience, Tustin, CA

Validation Performed by: Kristina Ilina

Validation Reviewed by: Vanessa Godard

Validation Date: 27 March 2023

Haley & Aldrich, Inc. prepared this Data Usability Summary Report (DUSR) to summarize the review and validation of the analytical results for Sample Delivery Group(s) (SDG) listed. This DUSR is organized into the following sections:

1. **Level II, First Quarter 2023**
2. **Explanations**
3. **Glossary**
4. **Abbreviations**
5. **Qualifiers**

References

This data validation and usability assessment was performed per the guidance and requirements established by the United States Environmental Protection Agency (USEPA) using the following reference materials:

- National Functional Guidelines (NFG) for Inorganic Data Review.
- The project-specific Quality Assurance Project Plan (QAPP), herein referred to as the specified limits (see references section).

Data reported in this sampling event were reported to the laboratory reporting limit (RL). Results found between the method detection limit (MDL) and RL are flagged J as estimated.

Sample data were qualified in accordance with the laboratory's standard operating procedures (SOP). The results presented in each laboratory report were found to be compliant with the data quality objectives (DQO) for the project and therefore usable; any exceptions are noted in the following pages.

1. Level II, First Quarter 2023

1.1 SAMPLE MANAGEMENT

This DUSR summarizes the review of SDG numbers:

- 570-129011-1,
- 570-129083-1,
- 570-129852-1,
- 570-129907-1,
- 570-129959-1,
- 570-129992-1,
- 570-130859-1, and
- 570-131456-1.

Samples were collected, preserved, and shipped following standard chain of custody (COC) protocol.

Samples were also received appropriately, identified correctly, and analyzed according to the COC. Issues noted with sample management are listed below:

- Samples tested for E200.8 Dissolved were not filtered within 15 minutes of sample collection as required by the method, filtered prior to analysis at the laboratory. No qualification is required.

Analyses were performed on the following samples:

Sample ID	Sample Type	Lab ID	Sample Date	Matrix	Methods
Outfall011_20230225_Comp	N	570-129011-1	02/25/2023	WM	A
Outfall011_20230225_Comp_F	N	570-129011-3	02/25/2023	WM	B
Outfall001_20230226_Comp	N	570-129083-1	02/26/2023	WM	A
Outfall001_20230226_Comp_F	N	570-129083-3	02/26/2023	WM	B
Outfall002_20230304_Comp	N	570-129852-1	03/04/2023	WM	A
Outfall002_20230304_Comp_F	N	570-129852-3	03/04/2023	WM	B
Outfall001_20230305_Comp	N	570-129907-1	03/05/2023	WM	A
Outfall001_20230305_Comp_F	N	570-129907-3	03/05/2023	WM	B
Outfall009_20230305_Comp	N	570-129959-1	03/05/2023	WM	A
Outfall009_20230305_Comp_F	N	570-129959-2	03/05/2023	WM	B
Outfall008_20230306_Comp	N	570-129992-1	03/06/2023	WM	A
Outfall008_20230306_Comp_F	N	570-129992-2	03/06/2023	WM	B
Outfall001_20230311_Comp	N	570-130859-1	3/11/2023	WM	A*
Outfall011_20230316_Comp	N	570-131456-1	3/16/2023	WM	A*

Method Holding Times			
A.	E200.8	Metals (by Mass Spectrometer), Total Recoverable	180 days for liquid, preserved
B.	E200.8	Metals (by Mass Spectrometer), Total Dissolved	180 days for liquid, preserved

** Only Iron analyzed by the method*

1.2 HOLDING TIMES/PRESERVATION

The samples arrived at the laboratory at the proper temperature and were prepared and analyzed within the holding time and preservation criteria specified per method protocol.

1.3 REPORTING LIMITS AND SAMPLE DILUTIONS

No sample dilutions were performed for the analysis of the samples in this report.

1.4 LABORATORY CONTROL SAMPLES

Refer to section E 1.3. Compounds associated with the laboratory control samples/laboratory control sample duplicates (LCS/LCSD) analyses associated with client samples exhibited recoveries and relative percent differences (RPDs) within the specified limits.

1.5 MATRIX SPIKE SAMPLES

Refer to section E 1.4. The sample(s) below were used for matrix spike/matrix spike duplicate (MS/MSD):

Lab Sample Number	Matrix Spike/ Matrix Spike Duplicate Sample Client ID	Method(s)
570-129083-1	Outfall001_20230226_Comp	E200.8 Total
570-129852-1	Outfall002_20230304_Comp	E200.8 Total
570-129852-3	Outfall002_20230304_Comp_F	E200.8 Dissolved
570-129907-1	Outfall001_20230305_Comp	E200.8 Total
570-129907-3	Outfall001_20230305_Comp_F	E200.8 Dissolved
570-129992-1	Outfall008_20230306_Comp	E200.8 Total
570-129992-2	Outfall008_20230306_Comp_F	E200.8 Dissolved
570-129959-1	Outfall009_20230305_Comp	E200.8 Total
570-129959-2	Outfall009_20230305_Comp_F	E200.8 Dissolved
570-130859-1	Outfall001_20230311_Comp	E200.8 Total
570-131456-1	Outfall011_20230316_Comp	E200.8 Total

The MS/MSD recoveries and the RPD between the MS and MSD results were within the specified limits with the following exceptions:

SDG #	Batch ID	Sample Type	Analyte	%R	Qualifier	Affected Samples
570-129852-1 570-129907-1	309505/ 309648	MSD	Selenium, Total	78%	NA	None, MS %R within QAPP acceptance limits
			Zinc, Total	78%	NA	None, MS %R within QAPP acceptance limits
570-131456-1	312912/ 312977	MS/MSD	Iron, Total	49%/58%	NA	None, native sample ≥ 4x the spike added

1.6 BLANK SAMPLE ANALYSIS

Refer to section E 1.5. Method blank samples had no detections, indicating that no contamination from laboratory activities occurred with the following exceptions:

SDG	Batch ID	Analyte Detected in Blank	Concentration (µg/L)	Qualifier	Affected Samples
570-129011-1, 570-129083-1	307908/308055	Iron, Total	3.8 J, DX	NA	Samples are >RL and >10x blank
		Manganese, Total	0.591 J, DX	NA	Samples are >RL and >10x blank
570-129852-1, 570-129907-1	309505/309648	Iron, Total	4.27 J, DX	J+	570-129852-1
	309903	Iron, Dissolved	8.73 J, DX	J+	570-129907-3
				RL U	570-129852-3
570-129992-1, 570-129959-1	309903	Antimony, Dissolved	0.739 J, DX	J+	570-129959-2, 570-129992-2

1.7 DUPLICATE SAMPLE ANALYSIS

Refer to section E 1.6. The laboratory did not analyze any laboratory duplicates as per the method or laboratory SOP.

1.8 PRECISION AND ACCURACY

Refer to section E 1.7. Where required by the method, some measurement of analytical accuracy and precision was reported for each method with the site samples.

1.9 SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The results presented in this report were found to comply with the DQOs for the project and the guidelines specified by the analytical method. Based on the review of this report, the data are useable and acceptable as no data was rejected. A summary of qualifiers applied to this data set are shown in Table 1.

2. Explanations

The following explanations include more detailed information regarding each of the sections in the DUSR above. Not all sections in the Explanations are represented:

- E 1.3 Laboratory Control Samples
  - The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) analyses are used to assess the precision and accuracy of the analytical method independent of matrix interferences.
- E 1.4 Matrix Spike Samples
  - Matrix spike/matrix spike duplicate (MS/MSD) data are used to assess the precision and accuracy of the analytical method and evaluate the effects of the sample matrix on the sample preparation procedures and measurement methodologies.
  - For inorganic methods, when a matrix spike recovery falls outside of the control limits and the sample result is less than four times the spike added, a post digestion spike (PDS) is performed.
- E 1.5 Blank Sample Analysis
  - Method blanks are prepared by the analytical laboratory and analyzed concurrently with the project samples to assess possible laboratory contamination.
- E 1.6 Laboratory and Field Duplicate Sample Analysis
  - The laboratory duplicate sample analysis is used by the laboratory at the time of the analysis to demonstrate acceptable method precision. The RPD or absolute difference was evaluated for each duplicate sample pair to monitor the reproducibility of the data.
- E 1.7 Precision and Accuracy
  - Precision measures the reproducibility of repetitive measurements. In a laboratory environment, this will be measured by determining the relative percent difference (RPD) found between a primary and a duplicate sample. This can be an LCS/LCSD pair, a MS/MSD pair, a laboratory duplicate performed on a site sample, or a field duplicate collected and analyzed concurrently with a site sample.
  - Accuracy is a statistical measurement of the correctness of a measured value and includes components of random error (variability caused by imprecision) and systematic error. In a laboratory environment, this will be measured by determining the percent recovery (%R) of certain spiked compounds. This can be assessed using LCS, blank spike (BS), MS, and/or surrogate recoveries.

3. Glossary

Not all of the following symbols, acronyms, or qualifiers occur in this document.

- Sample Types:
  - EB Equipment Blank Sample
  - FB Field Blank Sample
  - FD Field Duplicate Sample
  - N Primary Sample
  - TB Trip Blank Sample
- Units:
  - % SURVIVAL percent survival
  - µg/L microgram per liter
  - mg/kg milligrams per kilogram
  - mg/L milligram per liter
  - mL/L milliliters per liter
  - mpn/100mL most probable number per 100 milliliters
  - NTU nephelometric turbidity unit
  - pCi/L picocuries per liter
  - umhos/cm micromhos per centimeter
- Matrices:
  - WM Stormwater
  - WMQ Water Quality control matrix
- Table Footnotes:
  - NA Not applicable
  - ND Non-detect
  - NR Not reported
- Common Symbols:
  - % percent
  - < less than
  - ≤ less than or equal to
  - > greater than
  - ≥ greater than or equal to
  - = equal
  - °C degrees Celsius
  - ± plus or minus
  - ~ approximately
  - x times (multiplier)
- Fractions:
  - D Dissolved (filtered)
  - N Normal (method cannot be filtered)
  - T Total (unfiltered)

4. Abbreviations

%D	Percent Difference
%R	Percent Recovery
%RSD	Percent Relative Standard Deviation
2s	2 sigma
4,4-DDT	4 4-dichlorodiphenyltrichloroethane
Abs Diff	Absolute Difference
amu	atomic mass unit
BPJ	Best Professional Judgement
BS	Blank Spike
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CCVL	Continuing Calibration Verification Low
COC	Chain of Custody
COM	Combined Isotope Calculation
Cr (VI)	Hexavalent Chromium
CRI	Collision Reaction Interface
DQO	data quality objective
DUSR	Data Usability Summary Report
EMPC	Estimated Maximum Possible Concentration
FBK	Field Blank Contamination
FDP	Field Duplicate
GC	Gas Chromatograph
GC/MS	Gas Chromatography/Mass Spectrometry
GPC	Gel Permeation Chromatography
HCl	Hydrochloric Acid
ICAL	Initial Calibration
ICB	Initial Calibration Blank
ICP/MS	Inductively Coupled Plasma/ Mass Spectrometry
ICV	Initial Calibration Verification
ICVL	Initial Calibration Verification Low
IPA	Isopropyl Alcohol
LC	Laboratory Control
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate
MDC	Minimum Detectable Concentration
MDL	Laboratory Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NFG	National Functional Guidelines
NH_3	Ammonia
PCB	Polychlorinated Biphenyl
PDS	Post Digestion Spike
PEM	Performance Evaluation Mixture
QAPP	Quality Assurance Project Plan
QC	Quality Control
QSM	Quality Systems Manual
R^2	R-squared value
Ra-226	Radium-226
Ra-228	Radium-228
RESC	Resolution Check Measure
RER	Relative Error Ratio
RL	Laboratory Reporting Limit
RPD	Relative Percent Difference
RRF	Relative Response Factors
RT	Retention Time
SAP	sampling analysis plan
SDG	Sample Delivery Group
SIM	Selected ion monitoring
SOP	Laboratory Standard Operating Procedures
SPE	Solid Phase Extraction
SVOC	Semi-Volatile Organic Compounds
TIC	Tentatively Identified Compound
TKN	Total Kjeldahl Nitrogen
TPH	Total Petroleum Hydrocarbon
TPU	Total Propagated Uncertainty
amu	atomic mass unit
USEPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compounds

5. Qualifiers

The qualifiers below are from the USEPA National Functional Guidelines and the data in the DUSR may contain these qualifiers:

- Laboratory Qualifiers:

BA	Relative percent difference out of control.
BU	Analyzed out of holding time.
BV	Sample received after holding time expired.
EY	Result exceeds normal dynamic range; reported as a minimum estimate.
F1	MS and/or MSD recovery exceeds control limits.
G	The Sample MDC is greater than the requested RL.
J,DX	Results found between the EDL or MDL and laboratory RL.
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS).
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS).
LQ	LCS/LCSD recovery above method control limits.
MB	Analyte present in the method blank.
PI	Primary and confirm results varied by > than 40% RPD.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio; the measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.
U	Result is less than the sample detection limit.

- Validation Notes:

--	Based on validation of the data, a qualifier was not required.
*1	Improper preservation of sample.
*III	Unusual problems found with the data that have been described in the validation report.
B	Laboratory method blank contamination.
D	The analysis with this flag should not be used because another more technically sound analysis is available.
DNQ	Detected but not quantified (constituent value greater than or equal to the laboratory method detection limit and less than the laboratory reporting limit).
E	Duplicates show poor agreement.
H	Holding times were exceeded.
L1	Laboratory control standard (LCS)/laboratory control standard duplicate (LCSD), relative percent difference (RPD) was outside the control limit.
Q	Matrix spike (MS) recovery outside of control limits.
RPD	Pesticides and PCB Confirmation Column RPD Exceeded.

- Validation Qualifiers:

=	No Qualifier.
J	The compound was positively identified; however, the associated numerical value is an estimated concentration only.
J-	The result is an estimated quantity, but the result may be biased low.
J+	The result is an estimated quantity, but the result may be biased high.
R	The sample results were rejected as unusable; the compound may or may not be present in the sample.
U	The compound was analyzed for but not detected. The associated value is either the compound quantitation limit if not detected by the analytical instrument or could be the reported or blank concentration if qualified by blank contamination. This can also be displayed as less than the associated compound quantitation limit (<RL or <MDL), or “ND”.
UJ	The compound was not detected above the reported sample quantitation limit; however, the reported limit is estimated and may or may not represent the actual limit of quantitation.

References

1. United States Environmental Protection Agency, 2020. National Functional Guidelines for Inorganic Superfund Methods Data Review. EPA-542-R-20-006. November 2020.
2. Haley & Aldrich, Inc, 2015. Quality Assurance Project Field Plan for Santa Susana Field Laboratory Stormwater Sampling Program. December.

TABLE 1
SYSTEM PERFORMANCE SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIEDL LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Fraction	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701299591	OUTFALL 009	Outfall009_20230305_Comp	3/5/2023	570-129959-1	E200.8	T	Antimony	1.9	J,DX	J	DNQ	µg/L	
5701290111	OUTFALL 011	Outfall011_20230225_Comp	2/25/2023	570-129011-1	E200.8	T	Cadmium	0.13	J,DX	J	DNQ	µg/L	
5701299591	OUTFALL 009	Outfall009_20230305_Comp_F	3/5/2023	570-129959-2	E200.8	D	Antimony	4.2	BUMB	J+	B	µg/L	
5701299921	OUTFALL 008	Outfall008_20230306_Comp_F	3/6/2023	570-129992-2	E200.8	D	Antimony	3.3	BUMB	J+	B	µg/L	
5701298521	OUTFALL 002	OUTFALL002_20230304_Comp_F	3/4/2023	570-129852-3	E200.8	D	Cadmium	0.28	J,DXBU	J	DNQ	µg/L	
5701299071	OUTFALL 001	Outfall001_20230305_Comp_F	3/5/2023	570-129907-3	E200.8	D	Cadmium	0.13	J,DXBU	J	DNQ	µg/L	
5701299921	OUTFALL 008	Outfall008_20230306_Comp	3/6/2023	570-129992-1	E200.8	T	Cadmium	0.13	J,DX	J	DNQ	µg/L	
5701298521	OUTFALL 002	OUTFALL002_20230304_Comp_F	3/4/2023	570-129852-3	E200.8	D	Copper	1.6	J,DXBU	J	DNQ	µg/L	
5701299071	OUTFALL 001	Outfall001_20230305_Comp_F	3/5/2023	570-129907-3	E200.8	D	Copper	1.4	J,DXBU	J	DNQ	µg/L	
5701299921	OUTFALL 008	Outfall008_20230306_Comp_F	3/6/2023	570-129992-2	E200.8	D	Copper	1.2	J,DXBU	J	DNQ	µg/L	
5701298521	OUTFALL 002	Outfall002_20230304_Comp	3/4/2023	570-129852-1	E200.8	T	Copper	1.7	J,DX	J	DNQ	µg/L	
5701299071	OUTFALL 001	Outfall001_20230305_Comp	3/5/2023	570-129907-1	E200.8	T	Copper	1.4	J,DX	J	DNQ	µg/L	
5701299921	OUTFALL 008	Outfall008_20230306_Comp	3/6/2023	570-129992-1	E200.8	T	Copper	1.1	J,DX	J	DNQ	µg/L	
5701298521	OUTFALL 002	Outfall002_20230304_Comp	3/4/2023	570-129852-1	E200.8	T	Iron	24	MB	J+	B	µg/L	
5701298521	OUTFALL 002	OUTFALL002_20230304_Comp_F	3/4/2023	570-129852-3	E200.8	D	Iron	15	JDXBUMB	U	B	µg/L	Report as RL U. Prior to validation, MDL was 3.7
5701299071	OUTFALL 001	Outfall001_20230305_Comp_F	3/5/2023	570-129907-3	E200.8	D	Iron	71	BUMB	J+	B	µg/L	
5701290111	OUTFALL 011	Outfall011_20230225_Comp_F	2/25/2023	570-129011-3	E200.8	D	Lead	0.2	J,DXBU	J	DNQ	µg/L	
5701290831	OUTFALL 001	Outfall001_20230226_Comp_F	2/26/2023	570-129083-3	E200.8	D	Lead	0.2	J,DXBU	J	DNQ	µg/L	
5701298521	OUTFALL 002	OUTFALL002_20230304_Comp_F	3/4/2023	570-129852-3	E200.8	D	Lead	0.34	J,DXBU	J	DNQ	µg/L	
5701299071	OUTFALL 001	Outfall001_20230305_Comp_F	3/5/2023	570-129907-3	E200.8	D	Lead	0.17	J,DXBU	J	DNQ	µg/L	
5701299591	OUTFALL 009	Outfall009_20230305_Comp_F	3/5/2023	570-129959-2	E200.8	D	Lead	0.49	J,DXBU	J	DNQ	µg/L	
5701299921	OUTFALL 008	Outfall008_20230306_Comp_F	3/6/2023	570-129992-2	E200.8	D	Lead	0.14	J,DXBU	J	DNQ	µg/L	
5701299591	OUTFALL 009	Outfall009_20230305_Comp	3/5/2023	570-129959-1	E200.8	T	Lead	0.17	J,DX	J	DNQ	µg/L	
5701299921	OUTFALL 008	Outfall008_20230306_Comp	3/6/2023	570-129992-1	E200.8	T	Lead	0.21	J,DX	J	DNQ	µg/L	
5701299591	OUTFALL 009	Outfall009_20230305_Comp_F	3/5/2023	570-129959-2	E200.8	D	Nickel	1.5	J,DXBU	J	DNQ	µg/L	
5701299921	OUTFALL 008	Outfall008_20230306_Comp_F	3/6/2023	570-129992-2	E200.8	D	Nickel	1.1	J,DXBU	J	DNQ	µg/L	
5701298521	OUTFALL 002	OUTFALL002_20230304_Comp_F	3/4/2023	570-129852-3	E200.8	D	Selenium	0.57	J,DXBU	J	DNQ	µg/L	
5701299591	OUTFALL 009	Outfall009_20230305_Comp	3/5/2023	570-129959-1	E200.8	T	Nickel	1.6	J,DX	J	DNQ	µg/L	
5701299921	OUTFALL 008	Outfall008_20230306_Comp	3/6/2023	570-129992-1	E200.8	T	Nickel	1	J,DX	J	DNQ	µg/L	
5701290111	OUTFALL 011	Outfall011_20230225_Comp	2/25/2023	570-129011-1	E200.8	T	Selenium	0.6	J,DX	J	DNQ	µg/L	
5701299591	OUTFALL 009	Outfall009_20230305_Comp_F	3/5/2023	570-129959-2	E200.8	D	Silver	0.43	J,DXBU	J	DNQ	µg/L	
5701299921	OUTFALL 008	Outfall008_20230306_Comp_F	3/6/2023	570-129992-2	E200.8	D	Silver	0.4	J,DXBU	J	DNQ	µg/L	
5701299591	OUTFALL 009	Outfall009_20230305_Comp	3/5/2023	570-129959-1	E200.8	T	Silver	0.28	J,DX	J	DNQ	µg/L	
5701299921	OUTFALL 008	Outfall008_20230306_Comp	3/6/2023	570-129992-1	E200.8	T	Silver	0.35	J,DX	J	DNQ	µg/L	
5701299921	OUTFALL 008	Outfall008_20230306_Comp	3/6/2023	570-129992-1	E200.8	T	Thallium	0.14	J,DX	J	DNQ	µg/L	
5701298521	OUTFALL 002	Outfall002_20230304_Comp	3/4/2023	570-129852-1	E200.8	T	Zinc	3.3	J,DX	J	DNQ	µg/L	
5701299591	OUTFALL 009	Outfall009_20230305_Comp	3/5/2023	570-129959-1	E200.8	T	Zinc	3.1	J,DX	J	DNQ	µg/L	
5701290111	OUTFALL 011	Outfall011_20230225_Comp_F	2/25/2023	570-129011-3	E200.8	D	Zinc	4.5	J,DXBU	J	DNQ	µg/L	
5701290831	OUTFALL 001	Outfall001_20230226_Comp_F	2/26/2023	570-129083-3	E200.8	D	Zinc	4.9	J,DXBU	J	DNQ	µg/L	
5701298521	OUTFALL 002	OUTFALL002_20230304_Comp_F	3/4/2023	570-129852-3	E200.8	D	Zinc	3	J,DXBU	J	DNQ	µg/L	
5701299071	OUTFALL 001	Outfall001_20230305_Comp_F	3/5/2023	570-129907-3	E200.8	D	Zinc	3.6	J,DXBU	J	DNQ	µg/L	
5701299591	OUTFALL 009	Outfall009_20230305_Comp_F	3/5/2023	570-129959-2	E200.8	D	Zinc	4.4	J,DXBU	J	DNQ	µg/L	
5701299921	OUTFALL 008	Outfall008_20230306_Comp_F	3/6/2023	570-129992-2	E200.8	D	Zinc	3	J,DXBU	J	DNQ	µg/L	

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Data Usability Summary Report

Project Name: The Boeing Company, Santa Susana Field Laboratory, NPDES

Project Description: First Quarter 2023 Stormwater Samples

Sample Date(s): 24 February through 30 March 2023

Analytical Laboratory: Eurofins Calscience, Tustin, CA

Validation Performed by: Kristina Ilina

Validation Reviewed by: Vanessa Godard

Validation Date: 27 April 2023

Haley & Aldrich, Inc. prepared this Data Usability Summary Report (DUSR) to summarize the review and validation of the analytical results for Sample Delivery Group(s) (SDG) listed. This DUSR is organized into the following sections:

1. **Level II, First Quarter 2023**
2. **Explanations**
3. **Glossary**
4. **Abbreviations**
5. **Qualifiers**

References

This data validation and usability assessment was performed per the guidance and requirements established by the United States Environmental Protection Agency (USEPA) using the following reference materials:

- USEPA Contract Laboratory Program (CLP) NFG for Chlorinated Dioxin/Furan Data Review.
- The project-specific Quality Assurance Project Plan (QAPP), herein referred to as the specified limits (see references section).

Data reported in this sampling event were reported to the laboratory estimated detection limit (EDL) or method detection limit (MDL). Results found between the EDL or MDL and laboratory reporting limit (RL) are flagged J as estimated.

Sample data were qualified in accordance with the laboratory's standard operating procedures (SOP). The results presented in each laboratory report were found to be compliant with the data quality objectives (DQO) for the project and therefore usable; any exceptions are noted in the following pages.

1. Level II, First Quarter 2023

1.1 SAMPLE MANAGEMENT

This DUSR summarizes the review of SDG numbers listed in Table 1.

Samples were collected, preserved, and shipped following standard chain of custody (COC) protocol.

- Samples were subcontracted to Eurofins Sacramento in West Sacramento, California.

Samples were also received appropriately, identified correctly, and analyzed according to the COC. Issues noted with sample management are listed below:

- For SDGs 570-129009-2, 570-129010-2, 570-129011-2, 570-129083-2, and 570-129084-2, custody seals were not used when transported between subcontracted laboratories.
- The container labels for the following samples did not match the information listed on the Chain-of-Custody (COC): Outfall001_20230311_Comp (570-130859-1). The container labels list collection time 09:15, while the COC lists collection time 08:00. The lab logged according to COC.
- The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): Outfall008_20230311_Comp_Extra (570-130861-3). Received ICOC for job 570-130861 and only sample Outfall008_20230311_Comp was listed. The subcontracted lab logged as in ICOC.

Analyses were performed on the samples listed in Table 2. Method holding times are listed in Table 3.

1.2 HOLDING TIMES/PRESERVATION

The samples arrived at the laboratory at the proper temperature and were prepared and analyzed within the holding time and preservation criteria specified per method protocol.

1.3 REPORTING LIMITS AND SAMPLE DILUTIONS

The RLs for the samples within this SDG met or were below the minimum RL requirements specified by the project specific QAPP.

1.4 SURROGATE RECOVERY COMPLIANCE

Refer to section E 1.2. The percent recovery (%R) for each surrogate compound added to each project sample were determined to be within the laboratory specified quality control (QC) limits.

1.5 LABORATORY CONTROL SAMPLES

Refer to section E 1.3. Compounds associated with the laboratory control samples/laboratory control sample duplicates (LCS/LCSD) analyses associated with client samples exhibited recoveries and relative percent differences (RPDs) within the specified limits with the exceptions listed in Table 4.

1.6 MATRIX SPIKE SAMPLES

Refer to section E 1.4. The laboratory did not analyze any matrix spike/matrix spike duplicate (MS/MSD) analysis in these SDGs.

1.7 BLANK SAMPLE ANALYSIS

Refer to section E 1.5. Method blank samples had no detections, indicating that no contamination from laboratory activities occurred, with exceptions listed in Table 5.

1.8 DUPLICATE SAMPLE ANALYSIS

Refer to section E 1.6. The laboratory did not analyze any laboratory duplicates as per the method or laboratory SOP.

1.9 PRECISION AND ACCURACY

Refer to section E 1.7. Where required by the method, some measurement of analytical accuracy and precision was reported for each method with the site samples.

1.10 DIOXIN/FURAN ESTIMATED MAXIMUM POSSIBLE CONCENTRATION (EMPC)

Refer to section E 1.9. A result previously qualified as a non-detect for method blank contamination was not further qualified as an EMPC. The EMPC flags reported by the laboratory are listed in Table 6.

1.11 COMPOUND IDENTIFICATION

The second-column confirmation analysis for isomer 2,3,7,8-TCDF did not confirm the initial result for samples shown below. As the confirmation column is more specific for the detection of 2,3,7,8-TCDF, the confirmation results were retained, and the initial result rejected (R) as duplicate data.

SDG #	Sample ID	Analysis Date/Time	Method	Analyte	Qualification
5701299682	Outfall018_ 20230305_Comp	3/23/23 4:19 AM	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	The laboratory reanalyzed the sample due to Calibration Curve Exceedance. The original results are marked nonreportable and the reanalysis results are accepted.
5701299922	Outfall008_ 20230306_Comp	3/24/23 10:55 PM			
5701301082	Outfall002_ 20230307_Comp	3/25/23 12:30 AM			

1.12 SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The results presented in this report were found to comply with the data quality objectives for the project and the guidelines specified by the analytical method. Based on the review of this report, the data are useable and acceptable except for rejected data noted in the table. A summary of qualifiers applied to this data set is shown in Table 7.

2. Explanations

The following explanations include more detailed information regarding each of the sections in the DUSR above. Not all sections in the Explanations are represented:

- E 1.2 Surrogate Recovery Compliance
  - Surrogates, also known as system monitoring compounds, are compounds added to each sample prior to sample preparation to determining the efficiency of the extraction procedure by evaluating the percent recovery (%R) of the compounds.
- E 1.3 Laboratory Control Samples
  - The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) analyses are used to assess the precision and accuracy of the analytical method independent of matrix interferences.
- E 1.4 Matrix Spike Samples
  - Matrix spike/matrix spike duplicate (MS/MSD) data are used to assess the precision and accuracy of the analytical method and evaluate the effects of the sample matrix on the sample preparation procedures and measurement methodologies.
  - For inorganic methods, when a matrix spike recovery falls outside of the control limits and the sample result is less than four times the spike added, a post digestion spike (PDS) is performed.
- E 1.5 Blank Sample Analysis
  - Method blanks are prepared by the analytical laboratory and analyzed concurrently with the project samples to assess possible laboratory contamination.
  - Field blanks are prepared to identify contamination that may have been introduced during field activity. Equipment blanks are prepared to identify contamination that may have been introduced while decontaminating sampling equipment. Trip blanks are prepared when volatile analysis is requested to identify contamination that may have been introduced during transport.
- E 1.6 Laboratory and Field Duplicate Sample Analysis
  - The laboratory duplicate sample analysis is used by the laboratory at the time of the analysis to demonstrate acceptable method precision. The RPD or absolute difference was evaluated for each duplicate sample pair to monitor the reproducibility of the data.
  - The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. The relative percent difference (RPD) or absolute difference was evaluated for each duplicate sample pair to monitor the reproducibility of the data.

- E 1.7 Precision and Accuracy
  - Precision measures the reproducibility of repetitive measurements. In a laboratory environment, this will be measured by determining the relative percent difference (RPD) found between a primary and a duplicate sample. This can be an LCS/LCSD pair, a MS/MSD pair, a laboratory duplicate performed on a site sample, or a field duplicate collected and analyzed concurrently with a site sample.
  - Accuracy is a statistical measurement of the correctness of a measured value and includes components of random error (variability caused by imprecision) and systematic error. In a laboratory environment, this will be measured by determining the percent recovery (%R) of certain spiked compounds. This can be assessed using LCS, blank spike (BS), MS, and/or surrogate recoveries.
- E 1.9 Dioxin/Furan Estimated Maximum Possible Concentration
  - An Estimated Maximum Possible Concentration (EMPC) is a worst-case estimate of the concentration for a dioxin/furan based on all identification criteria being met except the ion abundance ratio criteria, or if a peak representing a chlorinated diphenyl ether was detected.

3. Glossary

Not all of the following symbols, acronyms, or qualifiers occur in this document.

- Sample Types:
  - EB Equipment Blank Sample
  - FB Field Blank Sample
  - FD Field Duplicate Sample
  - N Primary Sample
  - TB Trip Blank Sample
- Units:
  - % SURVIVAL percent survival
  - µg/L microgram per liter
  - mg/kg milligrams per kilogram
  - mg/L milligram per liter
  - mL/L milliliters per liter
  - mpn/100mL most probable number per 100 milliliters
  - NTU nephelometric turbidity unit
  - pCi/L picocuries per liter
  - umhos/cm micromhos per centimeter
- Matrices:
  - WM Stormwater
  - WMQ Water Quality control matrix
- Table Footnotes:
  - NA Not applicable
  - ND Non-detect
  - NR Not reported
- Common Symbols:
  - % percent
  - < less than
  - ≤ less than or equal to
  - > greater than
  - ≥ greater than or equal to
  - = equal
  - °C degrees Celsius
  - ± plus or minus
  - ~ approximately
  - x times (multiplier)
- Fractions:
  - D Dissolved (filtered)
  - N Normal (method cannot be filtered)
  - T Total (unfiltered)

4. Abbreviations

%D	Percent Difference
%R	Percent Recovery
%RSD	Percent Relative Standard Deviation
2s	2 sigma
4,4-DDT	4 4-dichlorodiphenyltrichloroethane
Abs Diff	Absolute Difference
amu	atomic mass unit
BPJ	Best Professional Judgement
BS	Blank Spike
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CCVL	Continuing Calibration Verification Low
COC	Chain of Custody
COM	Combined Isotope Calculation
Cr (VI)	Hexavalent Chromium
CRI	Collision Reaction Interface
DQO	data quality objective
DUSR	Data Usability Summary Report
EMPC	Estimated Maximum Possible Concentration
FBK	Field Blank Contamination
FDP	Field Duplicate
GC	Gas Chromatograph
GC/MS	Gas Chromatography/Mass Spectrometry
GPC	Gel Permeation Chromatography
HCl	Hydrochloric Acid
ICAL	Initial Calibration
ICB	Initial Calibration Blank
ICP/MS	Inductively Coupled Plasma/ Mass Spectrometry
ICV	Initial Calibration Verification
ICVL	Initial Calibration Verification Low
IPA	Isopropyl Alcohol
LC	Laboratory Control
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate
MDC	Minimum Detectable Concentration
MDL	Laboratory Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NFG	National Functional Guidelines
NH_3	Ammonia
PCB	Polychlorinated Biphenyl
PDS	Post Digestion Spike
PEM	Performance Evaluation Mixture
QAPP	Quality Assurance Project Plan
QC	Quality Control
QSM	Quality Systems Manual
R^2	R-squared value
Ra-226	Radium-226
Ra-228	Radium-228
RESC	Resolution Check Measure
RER	Relative Error Ratio
RL	Laboratory Reporting Limit
RPD	Relative Percent Difference
RRF	Relative Response Factors
RT	Retention Time
SAP	sampling analysis plan
SDG	Sample Delivery Group
SIM	Selected ion monitoring
SOP	Laboratory Standard Operating Procedures
SPE	Solid Phase Extraction
SVOC	Semi-Volatile Organic Compounds
TIC	Tentatively Identified Compound
TKN	Total Kjeldahl Nitrogen
TPH	Total Petroleum Hydrocarbon
TPU	Total Propagated Uncertainty
amu	atomic mass unit
USEPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compounds

5. Qualifiers

The qualifiers below are from the USEPA National Functional Guidelines and the data in the DUSR may contain these qualifiers:

- Laboratory Qualifiers:

BA	Relative percent difference out of control.
BU	Analyzed out of holding time.
BV	Sample received after holding time expired.
EY	Result exceeds normal dynamic range; reported as a minimum estimate.
F1	MS and/or MSD recovery exceeds control limits.
G	The Sample MDC is greater than the requested RL.
J,DX	Results found between the EDL or MDL and laboratory RL.
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS).
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS).
LQ	LCS/LCSD recovery above method control limits.
MB	Analyte present in the method blank.
PI	Primary and confirm results varied by > than 40% RPD.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio; the measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.
U	Result is less than the sample detection limit.

- Validation Notes:

--	Based on validation of the data, a qualifier was not required.
*1	Improper preservation of sample.
*III	Unusual problems found with the data that have been described in the validation report.
B	Laboratory method blank contamination.
D	The analysis with this flag should not be used because another more technically sound analysis is available.
DNQ	Detected but not quantified (constituent value greater than or equal to the laboratory method detection limit and less than the laboratory reporting limit).
E	Duplicates show poor agreement.
H	Holding times were exceeded.
L1	Laboratory control standard (LCS)/laboratory control standard duplicate (LCSD), relative percent difference (RPD) was outside the control limit.
Q	Matrix spike (MS) recovery outside of control limits.
RPD	Pesticides and PCB Confirmation Column RPD Exceeded.

- Validation Qualifiers:

=	No Qualifier.
J	The compound was positively identified; however, the associated numerical value is an estimated concentration only.
J-	The result is an estimated quantity, but the result may be biased low.
J+	The result is an estimated quantity, but the result may be biased high.
R	The sample results were rejected as unusable; the compound may or may not be present in the sample.
U	The compound was analyzed for but not detected. The associated value is either the compound quantitation limit if not detected by the analytical instrument or could be the reported or blank concentration if qualified by blank contamination. This can also be displayed as less than the associated compound quantitation limit (<RL or <MDL), or “ND”.
UJ	The compound was not detected above the reported sample quantitation limit; however, the reported limit is estimated and may or may not represent the actual limit of quantitation.

References

1. United States Environmental Protection Agency (USEPA), 2011. USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review. EPA-540-R-11-016. September.
2. Haley & Aldrich, Inc, 2015. Quality Assurance Project Field Plan for Santa Susana Field Laboratory Stormwater Sampling Program. December.

TABLE 1

SDGS SUMMARY

THE BOEING COMPANY

SANTA SUSANA FIELD LABORATORY

SDG#
5701288402
5701290092
5701290102
5701290112
5701290832
5701290842
5701298522
5701299072
5701299592
5701299682
5701299922
5701300782
5701301082
5701301092
5701301272
5701301282
5701308592
5701308602
5701308612
5701308622
5701314562
5701314592
5701319382
5701319402
5701319452
5701319482
5701319522
5701321362
5701330362
5701330472
5701330542
5701330592
5701331022

TABLE 2
SAMPLE MANAGEMENT
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Sample ID	Sample Type	Lab ID	Sample Date	Matrix	Method(s)[1]
Outfall002_20230224_Comp	N	570-128840-1	2/24/23	WM	A
Outfall008_20230225_Comp	N	570-129009-1	2/25/23	WM	A
Outfall009_20230225_Comp	N	570-129010-1	2/25/23	WM	A
Outfall011_20230225_Comp	N	570-129011-1	2/25/23	WM	A
Outfall001_20230226_Comp	N	570-129083-1	2/26/23	WM	A
Outfall018_20230226_Comp	N	570-129084-1	2/26/23	WM	A
Outfall002_20230304_Comp	N	570-129852-1	3/4/23	WM	A
Outfall001_20230305_Comp	N	570-129907-1	3/5/23	WM	A
Outfall009_20230305_Comp	N	570-129959-1	3/5/23	WM	A
Outfall018_20230305_Comp	N	570-129968-1	3/5/23	WM	A
Outfall008_20230306_Comp	N	570-129992-1	3/6/23	WM	A
Outfall001_20230307_Comp	N	570-130078-1	3/7/23	WM	A
Outfall002_20230307_Comp	N	570-130108-1	3/7/23	WM	A
Outfall008_20230307_Comp	N	570-130109-1	3/7/23	WM	A
Outfall009_20230307_Comp	N	570-130127-1	3/7/23	WM	A
Outfall018_20230307_Comp	N	570-130128-1	3/7/23	WM	A
Outfall001_20230311_Comp	N	570-130859-1	3/11/23	WM	A
Outfall002_20230311_Comp	N	570-130860-1	3/11/23	WM	A
Outfall008_20230311_Comp	N	570-130861-1	3/11/23	WM	A
Outfall009_20230311_Comp	N	570-130862-1	3/11/23	WM	A
Outfall011_20230316_Comp	N	570-131456-1	3/16/23	WM	A
Outfall018_20230316_Comp	N	570-131459-1	3/16/23	WM	A
Outfall009_20230321_Comp	N	570-131938-1	3/21/23	WM	A
Outfall002_20230321_Comp	N	570-131940-1	3/21/23	WM	A
Outfall001_20230321_Comp	N	570-131945-1	3/21/23	WM	A
OUTFALL008_20230321_COMP	N	570-131948-1	3/21/23	WM	A
Outfall018_20230321_Comp	N	570-131952-1	3/21/23	WM	A
Outfall011_20230322_Comp	N	570-132136-1	3/21/23	WM	A
Outfall002_20230330_Comp	N	570-133036-1	3/30/23	WM	A
Outfall018_20230330_Comp	N	570-133047-1	3/30/23	WM	A
Outfall008_20230330_Comp	N	570-133054-1	3/30/23	WM	A
Outfall009_20230330_Comp	N	570-133059-1	3/30/23	WM	A
Outfall001_20230330_Comp	N	570-133102-1	3/30/23	WM	A

Notes:

1. Analytic methods corresponding to the listed letter codes are presented in Table 2.

TABLE 3
METHOD DESCRIPTION
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Letter Code	Analytic Method	Method Description	Holding Time
A.	E1613B	USEPA Standard Method for High Resolution Analysis of Dioxins/Furans	1 year, preserved

TABLE 4
LCS/LCSD
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG #	Method	Batch ID	Sample Type	Analyte	%R/RPD	Qualifier	Affected Samples
5701331022	E1613B	Prep Batch: 669114	LCSD	2,3,7,8-TCDF	73%/RPD=30	J/UJ	Outfall001_20230330_Comp Outfall002_20230330_Comp Outfall008_20230330_Comp Outfall009_20230330_Comp Outfall018_20230330_Comp
5701331022	E1613B	Prep Batch: 669114	LCSD	1,2,3,7,8-PeCDD	65%/RPD=27	J/UJ	
5701331022	E1613B	Prep Batch: 669114	LCSD	1,2,3,7,8-PeCDF	63%/RPD=30	J/UJ	
5701331022	E1613B	Prep Batch: 669114	LCSD	2,3,4,7,8-PeCDF	63%/RPD=30	J/UJ	
5701331022	E1613B	Prep Batch: 669114	LCSD	1,2,3,4,7,8-HxCDD	45%/RPD=63	J/UJ	
5701331022	E1613B	Prep Batch: 669114	LCSD	1,2,3,6,7,8-HxCDD	54%/RPD=53	J/UJ	
5701331022	E1613B	Prep Batch: 669114	LCSD	1,2,3,7,8,9-HxCDD	49%/RPD=57	J/UJ	
5701331022	E1613B	Prep Batch: 669114	LCSD	1,2,3,4,7,8-HxCDF	52%/RPD=54	J/UJ	
5701331022	E1613B	Prep Batch: 669114	LCSD	1,2,3,6,7,8-HxCDF	51%/RPD=56	J/UJ	
5701331022	E1613B	Prep Batch: 669114	LCSD	1,2,3,7,8,9-HxCDF	54%/RPD=47	J/UJ	
5701331022	E1613B	Prep Batch: 669114	LCSD	2,3,4,6,7,8-HxCDF	55%/RPD=45	J/UJ	
5701331022	E1613B	Prep Batch: 669114	LCSD	1,2,3,4,6,7,8-HpCDD	45%/RPD=51	J/UJ	
5701331022	E1613B	Prep Batch: 669114	LCSD	1,2,3,4,6,7,8-HpCDF	53%/RPD=46	J/UJ	
5701331022	E1613B	Prep Batch: 669114	LCSD	1,2,3,4,7,8,9-HpCDF	46%/RPD=54	J/UJ	
5701331022	E1613B	Prep Batch: 669114	LCSD	OCDD	49%/RPD=52	J/UJ	
5701331022	E1613B	Prep Batch: 669114	LCSD	OCDF	48%/RPD=53	J/UJ	

TABLE 5
METHOD BLANKS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Batch ID	Analyte Detected in Blank	Concentration (µg/L)	Qualifier	Affected Samples
Prep Batch 662474	1,2,3,4,6,7,8-HpCDD	0.00000127 J,DX q	Result U	Outfall002_20230307_Comp Outfall008_20230307_Comp Outfall001_20230307_Comp Outfall008_20230306_Comp
Prep Batch 662474	1,2,3,4,6,7,8-HpCDF	0.00000137 J,DX	Result U	Outfall002_20230307_Comp Outfall008_20230307_Comp Outfall001_20230307_Comp Outfall008_20230306_Comp
Prep Batch 662474	1,2,3,4,7,8-HxCDD	0.00000212 J,DX	Result U	Outfall002_20230307_Comp Outfall008_20230307_Comp Outfall001_20230307_Comp Outfall008_20230306_Comp
Prep Batch 662474	1,2,3,4,7,8-HxCDF	0.000000407 J,DX	Result U	Outfall002_20230307_Comp Outfall008_20230307_Comp Outfall001_20230307_Comp Outfall008_20230306_Comp
Prep Batch 662474	1,2,3,6,7,8-HxCDF	0.000000287 J,DX q	Result U	Outfall002_20230307_Comp Outfall008_20230307_Comp Outfall001_20230307_Comp Outfall008_20230306_Comp
Prep Batch 662474	1,2,3,7,8,9-HxCDF	0.000000381 J,DX	Result U	Outfall002_20230307_Comp Outfall008_20230307_Comp Outfall001_20230307_Comp Outfall008_20230306_Comp
Prep Batch 662474	2,3,4,6,7,8-HxCDF	0.000000354 J,DX	Result U	Outfall002_20230307_Comp Outfall008_20230307_Comp Outfall001_20230307_Comp Outfall008_20230306_Comp
Prep Batch 662474	OCDD	0.00000721 J,DX	Result U	Outfall002_20230307_Comp Outfall008_20230307_Comp Outfall001_20230307_Comp
Prep Batch 662474	OCDF	0.00000266 J,DX	Result U	Outfall002_20230307_Comp Outfall008_20230307_Comp Outfall001_20230307_Comp Outfall008_20230306_Comp
Prep Batch 661244	1,2,3,4,6,7,8-HpCDD	0.00000970 J,DX	Result U	Outfall002_20230304_Comp Outfall001_20230305_Comp Outfall009_20230305_Comp Outfall018_20230305_Comp
Prep Batch 661244	1,2,3,4,6,7,8-HpCDF	0.00000657 J,DX q	Result U	Outfall002_20230304_Comp Outfall001_20230305_Comp Outfall009_20230305_Comp Outfall018_20230305_Comp
Prep Batch 661244	1,2,3,4,7,8-HxCDD	0.00000252 J,DX	Result U	Outfall002_20230304_Comp Outfall001_20230305_Comp Outfall009_20230305_Comp Outfall018_20230305_Comp
Prep Batch 661244	1,2,3,6,7,8-HxCDD	0.000000678 J,DX q	Result U	Outfall002_20230304_Comp Outfall001_20230305_Comp Outfall009_20230305_Comp Outfall018_20230305_Comp
Prep Batch 661244	1,2,3,7,8,9-HxCDD	0.000000887 J,DX	Result U	Outfall002_20230304_Comp Outfall001_20230305_Comp Outfall009_20230305_Comp Outfall018_20230305_Comp
Prep Batch 661244	1,2,3,7,8,9-HxCDF	0.000000802 J,DX q	Result U	Outfall002_20230304_Comp Outfall001_20230305_Comp Outfall009_20230305_Comp Outfall018_20230305_Comp
Prep Batch 661244	OCDD	0.0000551 J,DX	Result U	Outfall002_20230304_Comp Outfall001_20230305_Comp Outfall009_20230305_Comp Outfall018_20230305_Comp
Prep Batch 661244	OCDF	0.0000171 J,DX	Result U	Outfall002_20230304_Comp Outfall001_20230305_Comp Outfall009_20230305_Comp Outfall018_20230305_Comp

TABLE 5
METHOD BLANKS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Batch ID	Analyte Detected in Blank	Concentration (µg/L)	Qualifier	Affected Samples
Prep Batch 661962	1,2,3,4,6,7,8-HpCDD	0.00000348 J,DX	Result U	Outfall002_20230224_Comp
Prep Batch 661962	1,2,3,4,6,7,8-HpCDF	0.00000267 J,DX	Result U	Outfall002_20230224_Comp
Prep Batch 661962	1,2,3,4,7,8,9-HpCDF	0.00000210 J,DX q	Result U	Outfall002_20230224_Comp
Prep Batch 661962	1,2,3,4,7,8-HxCDD	0.00000272 J,DX	Result U	Outfall002_20230224_Comp
Prep Batch 661962	1,2,3,4,7,8-HxCDF	0.00000152 J,DX	Result U	Outfall002_20230224_Comp
Prep Batch 661962	1,2,3,6,7,8-HxCDD	0.00000198 J,DX	Result U	Outfall002_20230224_Comp
Prep Batch 661962	1,2,3,6,7,8-HxCDF	0.00000167 J,DX q	Result U	Outfall002_20230224_Comp
Prep Batch 661962	1,2,3,7,8,9-HxCDD	0.00000135 J,DX	Result U	Outfall002_20230224_Comp
Prep Batch 661962	1,2,3,7,8,9-HxCDF	0.00000177 J,DX	Result U	Outfall002_20230224_Comp
Prep Batch 661962	1,2,3,7,8-PeCDF	0.00000130 J,DX	NA	None, samples are ND
Prep Batch 661962	2,3,4,6,7,8-HxCDF	0.00000150 J,DX	Result U	Outfall002_20230224_Comp
Prep Batch 661962	2,3,4,7,8-PeCDF	0.000000770 J,DX q	NA	None, samples are ND
Prep Batch 661962	OCDD	0.0000205 J,DX q	Result U	Outfall002_20230224_Comp
Prep Batch 661962	OCDF	0.00000622 J,DX	Result U	Outfall002_20230224_Comp
Prep Batch 662109	1,2,3,4,6,7,8-HpCDD	0.00000104 J,DX q	Result U	Outfall018_20230226_Comp, Outfall008_20230225_Comp, Outfall009_20230225_Comp, Outfall001_20230226_Comp
Prep Batch 662109	1,2,3,4,6,7,8-HpCDF	0.00000126 J,DX	Result U	Outfall011_20230225_Comp, Outfall018_20230226_Comp, Outfall008_20230225_Comp, Outfall009_20230225_Comp, Outfall001_20230226_Comp
Prep Batch 662109	1,2,3,4,7,8-HxCDD	0.00000174 J,DX	Result U	Outfall011_20230225_Comp, Outfall008_20230225_Comp, Outfall001_20230226_Comp, Outfall018_20230226_Comp, Outfall009_20230225_Comp

TABLE 5
METHOD BLANKS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Batch ID	Analyte Detected in Blank	Concentration (µg/L)	Qualifier	Affected Samples
Prep Batch 662109	1,2,3,6,7,8-HxCDD	0.000000455 J,DX q	Result U	Outfall011_20230225_Comp, Outfall008_20230225_Comp, Outfall009_20230225_Comp, Outfall001_20230226_Comp, Outfall018_20230226_Comp
Prep Batch 662109	1,2,3,7,8,9-HxCDF	0.000000967 J,DX	Result U	Outfall011_20230225_Comp, Outfall008_20230225_Comp, Outfall009_20230225_Comp, Outfall001_20230226_Comp, Outfall018_20230226_Comp
Prep Batch 662109	OCDD	0.0000112 J,DX	Result U	Outfall018_20230226_Comp, Outfall008_20230225_Comp,
Prep Batch 662109	OCDF	0.00000213 J,DX q	Result U	Outfall011_20230225_Comp, Outfall018_20230226_Comp, Outfall008_20230225_Comp, Outfall009_20230225_Comp, Outfall001_20230226_Comp
Prep Batch 663889	1,2,3,4,6,7,8-HpCDD	0.00000179 J,DX q	Result U	Outfall018_20230307_Comp Outfall009_20230307_Comp
Prep Batch 663889	1,2,3,4,6,7,8-HpCDF	0.00000167 J,DX q	Result U	Outfall018_20230307_Comp Outfall009_20230307_Comp
Prep Batch 663889	1,2,3,4,7,8,9-HpCDF	0.00000117 J,DX q	Result U	Outfall018_20230307_Comp
Prep Batch 663889	1,2,3,4,7,8-HxCDD	0.00000214 J,DX	Result U	Outfall018_20230307_Comp Outfall009_20230307_Comp
Prep Batch 663889	1,2,3,4,7,8-HxCDF	0.000000586 J,DX q	Result U	Outfall018_20230307_Comp
Prep Batch 663889	OCDD	0.0000102 J,DX q	Result U	Outfall018_20230307_Comp Outfall009_20230307_Comp
Prep Batch 663889	OCDF	0.00000355 J,DX	Result U	Outfall018_20230307_Comp
Prep Batch 664296	1,2,3,4,6,7,8-HpCDD	0.00000275 J,DX	Result U	Outfall001_20230311_Comp Outfall002_20230311_Comp
Prep Batch 664296	1,2,3,4,6,7,8-HpCDF	0.00000113 J,DX q	Result U	Outfall001_20230311_Comp Outfall002_20230311_Comp
Prep Batch 664296	1,2,3,4,7,8-HxCDD	0.00000154 J,DX q	Result U	Outfall001_20230311_Comp Outfall002_20230311_Comp
Prep Batch 664296	1,2,3,4,7,8-HxCDF	0.000000774 J,DX q	Result U	Outfall001_20230311_Comp Outfall002_20230311_Comp
Prep Batch 664296	1,2,3,6,7,8-HxCDD	0.000000942 J,DX q	Result U	Outfall001_20230311_Comp
Prep Batch 664296	1,2,3,6,7,8-HxCDF	0.00000056 J,DX q	Result U	Outfall001_20230311_Comp Outfall002_20230311_Comp
Prep Batch 664296	1,2,3,7,8,9-HxCDD	0.000000652 J,DX q	Result U	Outfall001_20230311_Comp Outfall002_20230311_Comp
Prep Batch 664296	1,2,3,7,8,9-HxCDF	0.00000116 J,DX q	Result U	Outfall001_20230311_Comp Outfall002_20230311_Comp
Prep Batch 664296	2,3,4,6,7,8-HxCDF	0.000000471 J,DX	Result U	Outfall001_20230311_Comp Outfall002_20230311_Comp
Prep Batch 664296	OCDD	0.0000123 J,DX q	Result U	Outfall001_20230311_Comp Outfall002_20230311_Comp
Prep Batch 664296	OCDF	0.00000403 J,DX	Result U	Outfall001_20230311_Comp Outfall002_20230311_Comp

TABLE 5
METHOD BLANKS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Batch ID	Analyte Detected in Blank	Concentration (µg/L)	Qualifier	Affected Samples
Prep Batch 664640	1,2,3,4,6,7,8-HpCDD	0.0000202 J,DX q	Result U	Outfall008_20230311_Comp Outfall009_20230311_Comp
Prep Batch 664640	1,2,3,4,6,7,8-HpCDF	0.0000579 q	Result U	Outfall008_20230311_Comp Outfall009_20230311_Comp
Prep Batch 664640	1,2,3,4,7,8,9-HpCDF	0.00000402 J,DX q	Result U	Outfall009_20230311_Comp
Prep Batch 664640	1,2,3,4,7,8-HxCDF	0.0000198 J,DX	NA	None, samples are ND
Prep Batch 664640	1,2,3,6,7,8-HxCDF	0.0000035 J,DX	NA	None, samples are ND
Prep Batch 664640	1,2,3,7,8,9-HxCDF	0.0000011 J,DX q	NA	None, samples are ND
Prep Batch 664640	2,3,4,6,7,8-HxCDF	0.00000241 J,DX	NA	None, samples are ND
Prep Batch 664640	OCDD	0.000433	Result U	Outfall008_20230311_Comp Outfall009_20230311_Comp
Prep Batch 664640	OCDF	0.0000731 J,DX	Result U	Outfall008_20230311_Comp Outfall009_20230311_Comp
Prep Batch 665359	1,2,3,4,6,7,8-HpCDD	0.00000427 J,DX q	Result U	Outfall011_20230316_Comp
Prep Batch 665359	1,2,3,4,6,7,8-HpCDF	0.00000157 J,DX q	Result U	Outfall011_20230316_Comp
Prep Batch 665359	1,2,3,4,7,8,9-HpCDF	0.00000157 J,DX q	NA	None, samples are ND
Prep Batch 665359	1,2,3,4,7,8-HxCDD	0.0000023 J,DX q	Result U	Outfall011_20230316_Comp
Prep Batch 665359	1,2,3,4,7,8-HxCDF	0.00000162 J,DX q	NA	None, samples are ND
Prep Batch 665359	1,2,3,6,7,8-HxCDD	0.00000148 J,DX q	NA	None, samples are ND
Prep Batch 665359	1,2,3,6,7,8-HxCDF	0.00000124 J,DX q	NA	None, samples are ND
Prep Batch 665359	1,2,3,7,8,9-HxCDF	0.0000018 J,DX q	NA	None, samples are ND
Prep Batch 665359	2,3,4,6,7,8-HxCDF	0.00000119 J,DX q	NA	None, samples are ND
Prep Batch 665359	OCDD	0.0000139 J,DX q	Result U	Outfall011_20230316_Comp
Prep Batch 665359	OCDF	0.00000418 J,DX q	Result U	Outfall011_20230316_Comp
Prep Batch 665579	1,2,3,4,6,7,8-HpCDD	0.00000416 J,DX q	NA	None, samples are ND
Prep Batch 665579	1,2,3,4,6,7,8-HpCDF	0.0000046 J,DX	Result U	Outfall018_20230316_Comp
Prep Batch 665579	1,2,3,4,7,8,9-HpCDF	0.00000255 J,DX q	Result U	Outfall018_20230316_Comp
Prep Batch 665579	1,2,3,4,7,8-HxCDD	0.00000249 J,DX q	Result U	Outfall018_20230316_Comp
Prep Batch 665579	1,2,3,7,8,9-HxCDD	0.00000297 J,DX	NA	None, samples are ND
Prep Batch 665579	1,2,3,7,8,9-HxCDF	0.00000112 J,DX q	NA	None, samples are ND
Prep Batch 665579	OCDD	0.0000159 J,DX	Result U	Outfall018_20230316_Comp
Prep Batch 665579	OCDF	0.00000304 J,DX q	Result U	Outfall018_20230316_Comp
Prep Batch 666115	1,2,3,4,6,7,8-HpCDD	0.00000411 J,DX	Result U	Outfall011_20230322_Comp
Prep Batch 666115	1,2,3,4,6,7,8-HpCDF	0.00000227 J,DX q	Result U	Outfall011_20230322_Comp
Prep Batch 666115	1,2,3,4,7,8-HxCDD	0.00000259 J,DX q	Result U	Outfall011_20230322_Comp
Prep Batch 666115	1,2,3,4,7,8-HxCDF	0.00000131 J,DX	NA	None, samples are ND
Prep Batch 666115	1,2,3,6,7,8-HxCDD	0.00000163 J,DX q	Result U	Outfall011_20230322_Comp
Prep Batch 666115	1,2,3,7,8,9-HxCDD	0.00000167 J,DX	NA	None, samples are ND
Prep Batch 666115	1,2,3,7,8-PeCDF	0.00000111 J,DX q	NA	None, samples are ND
Prep Batch 666115	OCDD	0.0000401 J,DX	Result U	Outfall011_20230322_Comp
Prep Batch 666115	OCDF	0.00000736 J,DX q	Result U	Outfall011_20230322_Comp

TABLE 6
DIOXIN-FURAN EMPC
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG #	Lab ID	Analyte	Concentration (µg/L)	Qualifier	Affected Samples
5701290092	570-129009-1	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	0.00000092 J,DXq	UJ	Outfall008_20230225_Comp
5701290092	570-129009-1	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.00000076 J,DXq	UJ	Outfall008_20230225_Comp
5701290092	570-129009-1	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.00000086 J,DXq	UJ	Outfall008_20230225_Comp
5701290102	570-129010-1	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	0.00000051 J,DXq	UJ	Outfall009_20230225_Comp
5701290102	570-129010-1	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.00000059 J,DXq	UJ	Outfall009_20230225_Comp
5701290102	570-129010-1	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	0.0000011 J,DXq	UJ	Outfall009_20230225_Comp
5701290102	570-129010-1	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.00000065 J,DXq	UJ	Outfall009_20230225_Comp
5701290112	570-129011-1	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	0.0000012 J,DXq	UJ	Outfall011_20230225_Comp
5701290112	570-129011-1	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.0000011 J,DXq	UJ	Outfall011_20230225_Comp
5701290112	570-129011-1	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.00000095 J,DXq	UJ	Outfall011_20230225_Comp
5701290832	570-129083-1	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	0.0000018 J,DXq	UJ	Outfall001_20230226_Comp
5701290832	570-129083-1	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.00000084 J,DXq	UJ	Outfall001_20230226_Comp
5701290832	570-129083-1	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	0.00000097 J,DXq	UJ	Outfall001_20230226_Comp
5701290832	570-129083-1	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.00000082 J,DXq	UJ	Outfall001_20230226_Comp
5701290842	570-129084-1	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.00000051 J,DXq	UJ	Outfall018_20230226_Comp
5701290842	570-129084-1	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	0.0000008 J,DXq	UJ	Outfall018_20230226_Comp
5701290842	570-129084-1	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.00000061 J,DXq	UJ	Outfall018_20230226_Comp
5701290842	570-129084-1	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.00000038 J,DXq	UJ	Outfall018_20230226_Comp
5701298522	570-129852-1	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.00000057 J,DXq	UJ	Outfall002_20230304_Comp
5701298522	570-129852-1	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.00000043 J,DXq	UJ	Outfall002_20230304_Comp
5701299072	570-129907-1	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.00000028 J,DXq	UJ	Outfall001_20230305_Comp
5701299592	570-129959-1	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.00000046 J,DXq	UJ	Outfall009_20230305_Comp
5701299922	570-129992-1	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.0000007 J,DXq	UJ	Outfall008_20230306_Comp
5701299922	570-129992-1	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	0.0000023 J,DXq	UJ	Outfall008_20230306_Comp
5701300782	570-130078-1	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.0000008 J,DXq	UJ	Outfall001_20230307_Comp,
5701300782	570-130078-1	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.00000024 J,DXq	UJ	Outfall001_20230307_Comp,
5701301082	570-130108-1	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.00000055 J,DXq	UJ	Outfall002_20230307_Comp,

TABLE 6
DIOXIN-FURAN EMPC
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG #	Lab ID	Analyte	Concentration (µg/L)	Qualifier	Affected Samples
5701301082	570-130108-1	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	0.00000044 J,DXq	UJ	Outfall002_20230307_Comp,
5701301092	570-130109-1	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.0000005 J,DXq	UJ	Outfall008_20230307_Comp
5701301092	570-130109-1	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	0.00000034 J,DXq	UJ	Outfall008_20230307_Comp
5701301272	570-130127-1	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.00000059 J,DXq	UJ	Outfall009_20230307_Comp
5701301272	570-130127-1	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.00000052 J,DXq	UJ	Outfall009_20230307_Comp
5701301282	570-130128-1	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	0.00000046 J,DXq	UJ	Outfall018_20230307_Comp
5701308592	570-130859-1	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.00000049 J,DXq	UJ	Outfall001_20230311_Comp
5701319382	570-131938-1	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	0.00000069 J,DXq	UJ	Outfall009_20230321_Comp
5701319382	570-131938-1	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	0.0000029 J,DXq	UJ	Outfall009_20230321_Comp
5701319382	570-131938-1	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.0000014 J,DXq	UJ	Outfall009_20230321_Comp
5701319382	570-131938-1	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	0.00000054 J,DXq	UJ	Outfall009_20230321_Comp
5701319382	570-131938-1	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.00000043 J,DXq	UJ	Outfall009_20230321_Comp
5701319402	570-131940-1	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	0.0000083 J,DXq	UJ	Outfall002_20230321_Comp
5701319402	570-131940-1	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.00000022 J,DXq	UJ	Outfall002_20230321_Comp
5701319402	570-131940-1	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	0.0000026 J,DXq	UJ	Outfall002_20230321_Comp
5701319402	570-131940-1	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	0.00000066 J,DXq	UJ	Outfall002_20230321_Comp
5701319452	570-131945-1	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	0.0000015 J,DXq	UJ	Outfall001_20230321_Comp
5701319452	570-131945-1	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	0.00000046 J,DXq	UJ	Outfall001_20230321_Comp
5701319482	570-131948-1	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	0.0000006 J,DXq	UJ	OUTFALL008_20230321_COMP
5701319482	570-131948-1	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	0.00000042 J,DXq	UJ	OUTFALL008_20230321_COMP
5701319522	570-131952-1	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	0.0000024 J,DXq	UJ	Outfall018_20230321_Comp
5701319522	570-131952-1	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	0.0000047 J,DXq	UJ	Outfall018_20230321_Comp
5701319522	570-131952-1	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.00000039 J,DXq	UJ	Outfall018_20230321_Comp
5701319522	570-131952-1	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	0.0000012 J,DXq	UJ	Outfall018_20230321_Comp

TABLE 7
SYSTEM PERFORMANCE SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701288402	OUTFALL 002	Outfall002_20230224_Comp	2/24/2023	570-128840-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	7.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701288402	OUTFALL 002	Outfall002_20230224_Comp	2/24/2023	570-128840-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2.5E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701288402	OUTFALL 002	Outfall002_20230224_Comp	2/24/2023	570-128840-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	3.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701288402	OUTFALL 002	Outfall002_20230224_Comp	2/24/2023	570-128840-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	3.0E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701288402	OUTFALL 002	Outfall002_20230224_Comp	2/24/2023	570-128840-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701288402	OUTFALL 002	Outfall002_20230224_Comp	2/24/2023	570-128840-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701288402	OUTFALL 002	Outfall002_20230224_Comp	2/24/2023	570-128840-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.7E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701288402	OUTFALL 002	Outfall002_20230224_Comp	2/24/2023	570-128840-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	7.7E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701288402	OUTFALL 002	Outfall002_20230224_Comp	2/24/2023	570-128840-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.3E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701288402	OUTFALL 002	Outfall002_20230224_Comp	2/24/2023	570-128840-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1.3E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701288402	OUTFALL 002	Outfall002_20230224_Comp	2/24/2023	570-128840-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701288402	OUTFALL 002	Outfall002_20230224_Comp	2/24/2023	570-128840-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290092	OUTFALL 008	Outfall008_20230225_Comp	2/25/2023	570-129009-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	3.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290092	OUTFALL 008	Outfall008_20230225_Comp	2/25/2023	570-129009-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	4.8E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290092	OUTFALL 008	Outfall008_20230225_Comp	2/25/2023	570-129009-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.2E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290092	OUTFALL 008	Outfall008_20230225_Comp	2/25/2023	570-129009-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	4.1E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290092	OUTFALL 008	Outfall008_20230225_Comp	2/25/2023	570-129009-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.0E-06	J,DX	J	DNQ	µg/L	
5701290092	OUTFALL 008	Outfall008_20230225_Comp	2/25/2023	570-129009-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	9.2E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701290092	OUTFALL 008	Outfall008_20230225_Comp	2/25/2023	570-129009-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290092	OUTFALL 008	Outfall008_20230225_Comp	2/25/2023	570-129009-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	7.6E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701290092	OUTFALL 008	Outfall008_20230225_Comp	2/25/2023	570-129009-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	9.8E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290092	OUTFALL 008	Outfall008_20230225_Comp	2/25/2023	570-129009-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290092	OUTFALL 008	Outfall008_20230225_Comp	2/25/2023	570-129009-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.2E-06	J,DX	J	DNQ	µg/L	
5701290092	OUTFALL 008	Outfall008_20230225_Comp	2/25/2023	570-129009-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	8.6E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701290092	OUTFALL 008	Outfall008_20230225_Comp	2/25/2023	570-129009-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1.1E-06	J,DX	J	DNQ	µg/L	
5701290102	OUTFALL 009	Outfall009_20230225_Comp	2/25/2023	570-129010-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.8E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290102	OUTFALL 009	Outfall009_20230225_Comp	2/25/2023	570-129010-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	9.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290102	OUTFALL 009	Outfall009_20230225_Comp	2/25/2023	570-129010-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	3.3E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290102	OUTFALL 009	Outfall009_20230225_Comp	2/25/2023	570-129010-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	5.1E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701290102	OUTFALL 009	Outfall009_20230225_Comp	2/25/2023	570-129010-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.6E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290102	OUTFALL 009	Outfall009_20230225_Comp	2/25/2023	570-129010-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.9E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701290102	OUTFALL 009	Outfall009_20230225_Comp	2/25/2023	570-129010-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.4E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290102	OUTFALL 009	Outfall009_20230225_Comp	2/25/2023	570-129010-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1.1E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290102	OUTFALL 009	Outfall009_20230225_Comp	2/25/2023	570-129010-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.1E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701290102	OUTFALL 009	Outfall009_20230225_Comp	2/25/2023	570-129010-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	6.5E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701290102	OUTFALL 009	Outfall009_20230225_Comp	2/25/2023	570-129010-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	9.7E-07	J,DX	J	DNQ	µg/L	
5701290112	OUTFALL 011	Outfall011_20230225_Comp	2/25/2023	570-129011-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	5.2E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration

TABLE 7
SYSTEM PERFORMANCE SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701290112	OUTFALL 011	Outfall011_20230225_Comp	2/25/2023	570-129011-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.5E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290112	OUTFALL 011	Outfall011_20230225_Comp	2/25/2023	570-129011-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.8E-06	J,DX	J	DNQ	µg/L	
5701290112	OUTFALL 011	Outfall011_20230225_Comp	2/25/2023	570-129011-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.2E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701290112	OUTFALL 011	Outfall011_20230225_Comp	2/25/2023	570-129011-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.2E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290112	OUTFALL 011	Outfall011_20230225_Comp	2/25/2023	570-129011-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.1E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701290112	OUTFALL 011	Outfall011_20230225_Comp	2/25/2023	570-129011-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.7E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290112	OUTFALL 011	Outfall011_20230225_Comp	2/25/2023	570-129011-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290112	OUTFALL 011	Outfall011_20230225_Comp	2/25/2023	570-129011-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.7E-06	J,DX	J	DNQ	µg/L	
5701290112	OUTFALL 011	Outfall011_20230225_Comp	2/25/2023	570-129011-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	9.5E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701290832	OUTFALL 001	Outfall001_20230226_Comp	2/26/2023	570-129083-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.1E-05	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290832	OUTFALL 001	Outfall001_20230226_Comp	2/26/2023	570-129083-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.3E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290832	OUTFALL 001	Outfall001_20230226_Comp	2/26/2023	570-129083-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	4.3E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290832	OUTFALL 001	Outfall001_20230226_Comp	2/26/2023	570-129083-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.8E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701290832	OUTFALL 001	Outfall001_20230226_Comp	2/26/2023	570-129083-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.4E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290832	OUTFALL 001	Outfall001_20230226_Comp	2/26/2023	570-129083-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	8.4E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701290832	OUTFALL 001	Outfall001_20230226_Comp	2/26/2023	570-129083-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.3E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290832	OUTFALL 001	Outfall001_20230226_Comp	2/26/2023	570-129083-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1.1E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290832	OUTFALL 001	Outfall001_20230226_Comp	2/26/2023	570-129083-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	9.7E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701290832	OUTFALL 001	Outfall001_20230226_Comp	2/26/2023	570-129083-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	8.2E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701290842	OUTFALL 018	Outfall018_20230226_Comp	2/26/2023	570-129084-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	5.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290842	OUTFALL 018	Outfall018_20230226_Comp	2/26/2023	570-129084-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	7.4E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290842	OUTFALL 018	Outfall018_20230226_Comp	2/26/2023	570-129084-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	3.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290842	OUTFALL 018	Outfall018_20230226_Comp	2/26/2023	570-129084-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	9.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290842	OUTFALL 018	Outfall018_20230226_Comp	2/26/2023	570-129084-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.0E-06	J,DX	J	DNQ	µg/L	
5701290842	OUTFALL 018	Outfall018_20230226_Comp	2/26/2023	570-129084-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.7E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290842	OUTFALL 018	Outfall018_20230226_Comp	2/26/2023	570-129084-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.1E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701290842	OUTFALL 018	Outfall018_20230226_Comp	2/26/2023	570-129084-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290842	OUTFALL 018	Outfall018_20230226_Comp	2/26/2023	570-129084-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	8.6E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290842	OUTFALL 018	Outfall018_20230226_Comp	2/26/2023	570-129084-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	8.0E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701290842	OUTFALL 018	Outfall018_20230226_Comp	2/26/2023	570-129084-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	6.1E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701290842	OUTFALL 018	Outfall018_20230226_Comp	2/26/2023	570-129084-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.8E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701298522	OUTFALL 002	Outfall002_20230304_Comp	3/4/2023	570-129852-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	6.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701298522	OUTFALL 002	Outfall002_20230304_Comp	3/4/2023	570-129852-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.9E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701298522	OUTFALL 002	Outfall002_20230304_Comp	3/4/2023	570-129852-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.2E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701298522	OUTFALL 002	Outfall002_20230304_Comp	3/4/2023	570-129852-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	4.0E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701298522	OUTFALL 002	Outfall002_20230304_Comp	3/4/2023	570-129852-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	7.9E-07	J,DX	J	DNQ	µg/L	
5701298522	OUTFALL 002	Outfall002_20230304_Comp	3/4/2023	570-129852-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration

TABLE 7
SYSTEM PERFORMANCE SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701298522	OUTFALL 002	Outfall002_20230304_Comp	3/4/2023	570-129852-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.7E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701298522	OUTFALL 002	Outfall002_20230304_Comp	3/4/2023	570-129852-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	7.5E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701298522	OUTFALL 002	Outfall002_20230304_Comp	3/4/2023	570-129852-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	5.6E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701298522	OUTFALL 002	Outfall002_20230304_Comp	3/4/2023	570-129852-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	7.7E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701298522	OUTFALL 002	Outfall002_20230304_Comp	3/4/2023	570-129852-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.3E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701299072	OUTFALL 001	Outfall001_20230305_Comp	3/5/2023	570-129907-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	4.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299072	OUTFALL 001	Outfall001_20230305_Comp	3/5/2023	570-129907-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2.3E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299072	OUTFALL 001	Outfall001_20230305_Comp	3/5/2023	570-129907-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299072	OUTFALL 001	Outfall001_20230305_Comp	3/5/2023	570-129907-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	3.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299072	OUTFALL 001	Outfall001_20230305_Comp	3/5/2023	570-129907-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	3.8E-07	J,DX	J	DNQ	µg/L	
5701299072	OUTFALL 001	Outfall001_20230305_Comp	3/5/2023	570-129907-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299072	OUTFALL 001	Outfall001_20230305_Comp	3/5/2023	570-129907-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.8E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701299072	OUTFALL 001	Outfall001_20230305_Comp	3/5/2023	570-129907-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	5.3E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299592	OUTFALL 009	Outfall009_20230305_Comp	3/5/2023	570-129959-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	3.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299592	OUTFALL 009	Outfall009_20230305_Comp	3/5/2023	570-129959-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.3E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299592	OUTFALL 009	Outfall009_20230305_Comp	3/5/2023	570-129959-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.9E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701299592	OUTFALL 009	Outfall009_20230305_Comp	3/5/2023	570-129959-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299592	OUTFALL 009	Outfall009_20230305_Comp	3/5/2023	570-129959-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.6E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701299592	OUTFALL 009	Outfall009_20230305_Comp	3/5/2023	570-129959-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	6.3E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299592	OUTFALL 009	Outfall009_20230305_Comp	3/5/2023	570-129959-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	5.8E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299592	OUTFALL 009	Outfall009_20230305_Comp	3/5/2023	570-129959-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	4.6E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701299592	OUTFALL 009	Outfall009_20230305_Comp	3/5/2023	570-129959-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.6E-07	J,DX	J	DNQ	µg/L	
5701299682	OUTFALL 018	Outfall018_20230305_Comp	3/5/2023	570-129968-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	3.4E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299682	OUTFALL 018	Outfall018_20230305_Comp	3/5/2023	570-129968-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.6E-04	MB	U	B	µg/L	Report ND at sample concentration
5701299682	OUTFALL 018	Outfall018_20230305_Comp	3/5/2023	570-129968-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.6E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299682	OUTFALL 018	Outfall018_20230305_Comp	3/5/2023	570-129968-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.7E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299682	OUTFALL 018	Outfall018_20230305_Comp	3/5/2023	570-129968-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	9.5E-06	J,DX	J	DNQ	µg/L	
5701299682	OUTFALL 018	Outfall018_20230305_Comp	3/5/2023	570-129968-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	6.6E-06	J,DX	J	DNQ	µg/L	
5701299682	OUTFALL 018	Outfall018_20230305_Comp	3/5/2023	570-129968-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	8.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299682	OUTFALL 018	Outfall018_20230305_Comp	3/5/2023	570-129968-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	6.8E-06	J,DX	J	DNQ	µg/L	
5701299682	OUTFALL 018	Outfall018_20230305_Comp	3/5/2023	570-129968-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	8.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299682	OUTFALL 018	Outfall018_20230305_Comp	3/5/2023	570-129968-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	7.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299682	OUTFALL 018	Outfall018_20230305_Comp	3/5/2023	570-129968-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	7.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299682	OUTFALL 018	Outfall018_20230305_Comp	3/5/2023	570-129968-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	3.4E-06	J,DX	J	DNQ	µg/L	
5701299682	OUTFALL 018	Outfall018_20230305_Comp	3/5/2023	570-129968-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	4.1E-06	J,DX	J	DNQ	µg/L	
5701299682	OUTFALL 018	Outfall018_20230305_Comp	3/5/2023	570-129968-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	8.8E-06	J,DX	J	DNQ	µg/L	
5701299682	OUTFALL 018	Outfall018_20230305_Comp	3/5/2023	570-129968-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	5.1E-06	J,DX	J	DNQ	µg/L	

TABLE 7
SYSTEM PERFORMANCE SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701299682	OUTFALL 018	Outfall018_20230305_Comp	3/5/2023	570-129968-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1.0E-06	J,DXq	R	D	µg/L	
5701299922	OUTFALL 008	Outfall008_20230306_Comp	3/6/2023	570-129992-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.0E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299922	OUTFALL 008	Outfall008_20230306_Comp	3/6/2023	570-129992-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	8.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299922	OUTFALL 008	Outfall008_20230306_Comp	3/6/2023	570-129992-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.7E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299922	OUTFALL 008	Outfall008_20230306_Comp	3/6/2023	570-129992-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	2.5E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701299922	OUTFALL 008	Outfall008_20230306_Comp	3/6/2023	570-129992-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299922	OUTFALL 008	Outfall008_20230306_Comp	3/6/2023	570-129992-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299922	OUTFALL 008	Outfall008_20230306_Comp	3/6/2023	570-129992-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.4E-06	J,DX	J	DNQ	µg/L	
5701299922	OUTFALL 008	Outfall008_20230306_Comp	3/6/2023	570-129992-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	6.8E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701299922	OUTFALL 008	Outfall008_20230306_Comp	3/6/2023	570-129992-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.7E-06	J,DX	J	DNQ	µg/L	
5701299922	OUTFALL 008	Outfall008_20230306_Comp	3/6/2023	570-129992-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.3E-06	J,DX	J	DNQ	µg/L	
5701299922	OUTFALL 008	Outfall008_20230306_Comp	3/6/2023	570-129992-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	7.0E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701299922	OUTFALL 008	Outfall008_20230306_Comp	3/6/2023	570-129992-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701299922	OUTFALL 008	Outfall008_20230306_Comp	3/6/2023	570-129992-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.3E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701299922	OUTFALL 008	Outfall008_20230306_Comp	3/6/2023	570-129992-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2.8E-06	J,DX	R	D	µg/L	
5701299922	OUTFALL 008	Outfall008_20230306_Comp	3/6/2023	570-129992-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2.2E-06	J,DX	J	DNQ	µg/L	
5701300782	OUTFALL 001	Outfall001_20230307_Comp,	3/7/2023	570-130078-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	5.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701300782	OUTFALL 001	Outfall001_20230307_Comp,	3/7/2023	570-130078-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2.2E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701300782	OUTFALL 001	Outfall001_20230307_Comp,	3/7/2023	570-130078-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.4E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701300782	OUTFALL 001	Outfall001_20230307_Comp,	3/7/2023	570-130078-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	3.5E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701300782	OUTFALL 001	Outfall001_20230307_Comp,	3/7/2023	570-130078-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	6.3E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701300782	OUTFALL 001	Outfall001_20230307_Comp,	3/7/2023	570-130078-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701300782	OUTFALL 001	Outfall001_20230307_Comp,	3/7/2023	570-130078-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.3E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701300782	OUTFALL 001	Outfall001_20230307_Comp,	3/7/2023	570-130078-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	8.0E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701300782	OUTFALL 001	Outfall001_20230307_Comp,	3/7/2023	570-130078-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	5.7E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701300782	OUTFALL 001	Outfall001_20230307_Comp,	3/7/2023	570-130078-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	2.4E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701300782	OUTFALL 001	Outfall001_20230307_Comp,	3/7/2023	570-130078-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.7E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701301082	OUTFALL 002	Outfall002_20230307_Comp,	3/7/2023	570-130108-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	3.9E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701301082	OUTFALL 002	Outfall002_20230307_Comp,	3/7/2023	570-130108-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.4E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701301082	OUTFALL 002	Outfall002_20230307_Comp,	3/7/2023	570-130108-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.9E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701301082	OUTFALL 002	Outfall002_20230307_Comp,	3/7/2023	570-130108-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701301082	OUTFALL 002	Outfall002_20230307_Comp,	3/7/2023	570-130108-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	6.9E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701301082	OUTFALL 002	Outfall002_20230307_Comp,	3/7/2023	570-130108-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701301082	OUTFALL 002	Outfall002_20230307_Comp,	3/7/2023	570-130108-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.5E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701301082	OUTFALL 002	Outfall002_20230307_Comp,	3/7/2023	570-130108-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.5E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701301082	OUTFALL 002	Outfall002_20230307_Comp,	3/7/2023	570-130108-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	5.5E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701301082	OUTFALL 002	Outfall002_20230307_Comp,	3/7/2023	570-130108-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.5E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration

TABLE 7
SYSTEM PERFORMANCE SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701301082	OUTFALL 002	Outfall002_20230307_Comp,	3/7/2023	570-130108-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	4.4E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701301082	OUTFALL 002	Outfall002_20230307_Comp,	3/7/2023	570-130108-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1.1E-06	J,DX	R	D	µg/L	
5701301092	OUTFALL 008	Outfall008_20230307_Comp	3/7/2023	570-130109-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	3.2E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701301092	OUTFALL 008	Outfall008_20230307_Comp	3/7/2023	570-130109-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2.0E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701301092	OUTFALL 008	Outfall008_20230307_Comp	3/7/2023	570-130109-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.0E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701301092	OUTFALL 008	Outfall008_20230307_Comp	3/7/2023	570-130109-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	4.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701301092	OUTFALL 008	Outfall008_20230307_Comp	3/7/2023	570-130109-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	4.6E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701301092	OUTFALL 008	Outfall008_20230307_Comp	3/7/2023	570-130109-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701301092	OUTFALL 008	Outfall008_20230307_Comp	3/7/2023	570-130109-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.1E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701301092	OUTFALL 008	Outfall008_20230307_Comp	3/7/2023	570-130109-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.0E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701301092	OUTFALL 008	Outfall008_20230307_Comp	3/7/2023	570-130109-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	5.7E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701301092	OUTFALL 008	Outfall008_20230307_Comp	3/7/2023	570-130109-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	3.4E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701301092	OUTFALL 008	Outfall008_20230307_Comp	3/7/2023	570-130109-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.9E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701301272	OUTFALL 009	Outfall009_20230307_Comp	3/7/2023	570-130127-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.1E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701301272	OUTFALL 009	Outfall009_20230307_Comp	3/7/2023	570-130127-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.2E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701301272	OUTFALL 009	Outfall009_20230307_Comp	3/7/2023	570-130127-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.3E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701301272	OUTFALL 009	Outfall009_20230307_Comp	3/7/2023	570-130127-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.2E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701301272	OUTFALL 009	Outfall009_20230307_Comp	3/7/2023	570-130127-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.9E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701301272	OUTFALL 009	Outfall009_20230307_Comp	3/7/2023	570-130127-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	8.2E-07	J,DX	J	DNQ	µg/L	
5701301272	OUTFALL 009	Outfall009_20230307_Comp	3/7/2023	570-130127-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.2E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701301282	OUTFALL 018	Outfall018_20230307_Comp	3/7/2023	570-130128-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.1E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701301282	OUTFALL 018	Outfall018_20230307_Comp	3/7/2023	570-130128-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	8.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701301282	OUTFALL 018	Outfall018_20230307_Comp	3/7/2023	570-130128-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701301282	OUTFALL 018	Outfall018_20230307_Comp	3/7/2023	570-130128-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701301282	OUTFALL 018	Outfall018_20230307_Comp	3/7/2023	570-130128-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	3.1E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701301282	OUTFALL 018	Outfall018_20230307_Comp	3/7/2023	570-130128-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.3E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701301282	OUTFALL 018	Outfall018_20230307_Comp	3/7/2023	570-130128-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	4.6E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701308592	OUTFALL 001	Outfall001_20230311_Comp	3/11/2023	570-130859-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.5E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701308592	OUTFALL 001	Outfall001_20230311_Comp	3/11/2023	570-130859-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.8E-04	MB	U	B	µg/L	Report ND at sample concentration
5701308592	OUTFALL 001	Outfall001_20230311_Comp	3/11/2023	570-130859-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	7.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701308592	OUTFALL 001	Outfall001_20230311_Comp	3/11/2023	570-130859-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.7E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701308592	OUTFALL 001	Outfall001_20230311_Comp	3/11/2023	570-130859-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	6.9E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701308592	OUTFALL 001	Outfall001_20230311_Comp	3/11/2023	570-130859-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701308592	OUTFALL 001	Outfall001_20230311_Comp	3/11/2023	570-130859-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.5E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701308592	OUTFALL 001	Outfall001_20230311_Comp	3/11/2023	570-130859-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701308592	OUTFALL 001	Outfall001_20230311_Comp	3/11/2023	570-130859-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	5.2E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701308592	OUTFALL 001	Outfall001_20230311_Comp	3/11/2023	570-130859-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	5.6E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration

TABLE 7
SYSTEM PERFORMANCE SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701308592	OUTFALL 001	Outfall001_20230311_Comp	3/11/2023	570-130859-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	4.9E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701308592	OUTFALL 001	Outfall001_20230311_Comp	3/11/2023	570-130859-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	6.8E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701308602	OUTFALL 002	Outfall002_20230311_Comp	3/11/2023	570-130860-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.7E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701308602	OUTFALL 002	Outfall002_20230311_Comp	3/11/2023	570-130860-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2.0E-04	MB	U	B	µg/L	Report ND at sample concentration
5701308602	OUTFALL 002	Outfall002_20230311_Comp	3/11/2023	570-130860-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	7.8E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701308602	OUTFALL 002	Outfall002_20230311_Comp	3/11/2023	570-130860-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.9E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701308602	OUTFALL 002	Outfall002_20230311_Comp	3/11/2023	570-130860-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	6.7E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701308602	OUTFALL 002	Outfall002_20230311_Comp	3/11/2023	570-130860-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.8E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701308602	OUTFALL 002	Outfall002_20230311_Comp	3/11/2023	570-130860-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.1E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701308602	OUTFALL 002	Outfall002_20230311_Comp	3/11/2023	570-130860-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	3.6E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701308602	OUTFALL 002	Outfall002_20230311_Comp	3/11/2023	570-130860-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701308602	OUTFALL 002	Outfall002_20230311_Comp	3/11/2023	570-130860-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.2E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701308612	OUTFALL 008	Outfall008_20230311_Comp	3/11/2023	570-130861-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.0E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701308612	OUTFALL 008	Outfall008_20230311_Comp	3/11/2023	570-130861-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	7.3E-05	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701308612	OUTFALL 008	Outfall008_20230311_Comp	3/11/2023	570-130861-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.2E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701308612	OUTFALL 008	Outfall008_20230311_Comp	3/11/2023	570-130861-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	6.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701308622	OUTFALL 009	Outfall009_20230311_Comp	3/11/2023	570-130862-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.6E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701308622	OUTFALL 009	Outfall009_20230311_Comp	3/11/2023	570-130862-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2.3E-04	MB	U	B	µg/L	Report ND at sample concentration
5701308622	OUTFALL 009	Outfall009_20230311_Comp	3/11/2023	570-130862-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	7.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701308622	OUTFALL 009	Outfall009_20230311_Comp	3/11/2023	570-130862-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.0E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701308622	OUTFALL 009	Outfall009_20230311_Comp	3/11/2023	570-130862-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701314562	OUTFALL 011	Outfall011_20230316_Comp	3/16/2023	570-131456-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.3E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701314562	OUTFALL 011	Outfall011_20230316_Comp	3/16/2023	570-131456-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	4.3E-04	MB	U	B	µg/L	Report ND at sample concentration
5701314562	OUTFALL 011	Outfall011_20230316_Comp	3/16/2023	570-131456-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	9.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701314562	OUTFALL 011	Outfall011_20230316_Comp	3/16/2023	570-131456-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	4.2E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701314562	OUTFALL 011	Outfall011_20230316_Comp	3/16/2023	570-131456-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.5E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701314562	OUTFALL 011	Outfall011_20230316_Comp	3/16/2023	570-131456-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701314592	OUTFALL 018	Outfall018_20230316_Comp	3/16/2023	570-131459-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	8.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701314592	OUTFALL 018	Outfall018_20230316_Comp	3/16/2023	570-131459-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3.5E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701314592	OUTFALL 018	Outfall018_20230316_Comp	3/16/2023	570-131459-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	4.2E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701314592	OUTFALL 018	Outfall018_20230316_Comp	3/16/2023	570-131459-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	5.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701314592	OUTFALL 018	Outfall018_20230316_Comp	3/16/2023	570-131459-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.7E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701314592	OUTFALL 018	Outfall018_20230316_Comp	3/16/2023	570-131459-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.0E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701319382	OUTFALL 009	Outfall009_20230321_Comp	3/21/2023	570-131938-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.9E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701319382	OUTFALL 009	Outfall009_20230321_Comp	3/21/2023	570-131938-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.5E-05	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701319382	OUTFALL 009	Outfall009_20230321_Comp	3/21/2023	570-131938-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	3.4E-06	J,DX	J	DNQ	µg/L	
5701319382	OUTFALL 009	Outfall009_20230321_Comp	3/21/2023	570-131938-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.8E-06	J,DX	J	DNQ	µg/L	

TABLE 7
SYSTEM PERFORMANCE SUMMARY
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SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701319382	OUTFALL 009	Outfall009_20230321_Comp	3/21/2023	570-131938-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	5.4E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701319382	OUTFALL 009	Outfall009_20230321_Comp	3/21/2023	570-131938-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.4E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701319382	OUTFALL 009	Outfall009_20230321_Comp	3/21/2023	570-131938-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.3E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701319382	OUTFALL 009	Outfall009_20230321_Comp	3/21/2023	570-131938-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	6.9E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701319402	OUTFALL 002	Outfall002_20230321_Comp	3/21/2023	570-131940-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	8.3E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701319402	OUTFALL 002	Outfall002_20230321_Comp	3/21/2023	570-131940-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	7.0E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701319402	OUTFALL 002	Outfall002_20230321_Comp	3/21/2023	570-131940-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.6E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701319402	OUTFALL 002	Outfall002_20230321_Comp	3/21/2023	570-131940-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	6.6E-06	J,DX	J	DNQ	µg/L	
5701319402	OUTFALL 002	Outfall002_20230321_Comp	3/21/2023	570-131940-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	8.2E-07	J,DX	J	DNQ	µg/L	
5701319402	OUTFALL 002	Outfall002_20230321_Comp	3/21/2023	570-131940-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	6.6E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701319402	OUTFALL 002	Outfall002_20230321_Comp	3/21/2023	570-131940-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.2E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701319452	OUTFALL 001	Outfall001_20230321_Comp	3/21/2023	570-131945-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	4.6E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701319452	OUTFALL 001	Outfall001_20230321_Comp	3/21/2023	570-131945-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	7.9E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701319452	OUTFALL 001	Outfall001_20230321_Comp	3/21/2023	570-131945-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	7.1E-07	J,DX	J	DNQ	µg/L	
5701319452	OUTFALL 001	Outfall001_20230321_Comp	3/21/2023	570-131945-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.5E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701319482	OUTFALL 008	OUTFALL008_20230321_COMP	3/21/2023	570-131948-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	6.0E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701319482	OUTFALL 008	OUTFALL008_20230321_COMP	3/21/2023	570-131948-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	4.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701319482	OUTFALL 008	OUTFALL008_20230321_COMP	3/21/2023	570-131948-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.4E-06	J,DX	J	DNQ	µg/L	
5701319482	OUTFALL 008	OUTFALL008_20230321_COMP	3/21/2023	570-131948-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	4.2E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701319522	OUTFALL 018	Outfall018_20230321_Comp	3/21/2023	570-131952-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	4.7E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701319522	OUTFALL 018	Outfall018_20230321_Comp	3/21/2023	570-131952-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3.7E-05	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701319522	OUTFALL 018	Outfall018_20230321_Comp	3/21/2023	570-131952-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.2E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701319522	OUTFALL 018	Outfall018_20230321_Comp	3/21/2023	570-131952-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.4E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701319522	OUTFALL 018	Outfall018_20230321_Comp	3/21/2023	570-131952-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.0E-06	J,DX	J	DNQ	µg/L	
5701319522	OUTFALL 018	Outfall018_20230321_Comp	3/21/2023	570-131952-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.9E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701321362	OUTFALL 011	Outfall011_20230322_Comp	3/21/2023	570-132136-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	5.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701321362	OUTFALL 011	Outfall011_20230322_Comp	3/21/2023	570-132136-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	5.5E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701321362	OUTFALL 011	Outfall011_20230322_Comp	3/21/2023	570-132136-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701321362	OUTFALL 011	Outfall011_20230322_Comp	3/21/2023	570-132136-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	9.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701321362	OUTFALL 011	Outfall011_20230322_Comp	3/21/2023	570-132136-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.8E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701330362	OUTFALL 002	Outfall002_20230330_Comp	3/30/2023	570-133036-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	7.3E-06	JDXqMB	UJ	BL	µg/L	Report ND at sample concentration
5701330362	OUTFALL 002	Outfall002_20230330_Comp	3/30/2023	570-133036-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	4.3E-05	J,DXqMB	UJ	BL	µg/L	Report ND at sample concentration
5701330362	OUTFALL 002	Outfall002_20230330_Comp	3/30/2023	570-133036-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	3.2E-06	J,DXqMB	UJ	BL	µg/L	Report ND at sample concentration
5701330362	OUTFALL 002	Outfall002_20230330_Comp	3/30/2023	570-133036-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	4.3E-06	J,DXqMB	UJ	BL	µg/L	Report ND at sample concentration
5701330362	OUTFALL 002	Outfall002_20230330_Comp	3/30/2023	570-133036-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	5.0E-07	J,DXqMB	UJ	BL	µg/L	Report ND at sample concentration
5701330362	OUTFALL 002	Outfall002_20230330_Comp	3/30/2023	570-133036-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	ND	ULRBA	UJ	L	µg/L	
5701330362	OUTFALL 002	Outfall002_20230330_Comp	3/30/2023	570-133036-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	ND	ULRBA	UJ	L	µg/L	

TABLE 7
SYSTEM PERFORMANCE SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701330362	OUTFALL 002	Outfall002_20230330_Comp	3/30/2023	570-133036-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	ND	ULRBA	UJ	L	µg/L	
5701330362	OUTFALL 002	Outfall002_20230330_Comp	3/30/2023	570-133036-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	ND	ULRBA	UJ	L	µg/L	
5701330362	OUTFALL 002	Outfall002_20230330_Comp	3/30/2023	570-133036-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	ND	ULR	UJ	L	µg/L	
5701330362	OUTFALL 002	Outfall002_20230330_Comp	3/30/2023	570-133036-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	ND	ULRBA	UJ	L	µg/L	
5701330362	OUTFALL 002	Outfall002_20230330_Comp	3/30/2023	570-133036-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	2.4E-06	J,DXqLR	UJ	L*III	µg/L	Report ND at sample concentration
5701330362	OUTFALL 002	Outfall002_20230330_Comp	3/30/2023	570-133036-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	ND	ULR	UJ	L	µg/L	
5701330362	OUTFALL 002	Outfall002_20230330_Comp	3/30/2023	570-133036-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	ND	ULR	UJ	L	µg/L	
5701330362	OUTFALL 002	Outfall002_20230330_Comp	3/30/2023	570-133036-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	ND	ULR	UJ	L	µg/L	
5701330362	OUTFALL 002	Outfall002_20230330_Comp	3/30/2023	570-133036-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	ND	ULR	UJ	L	µg/L	
5701330472	OUTFALL 018	Outfall018_20230330_Comp	3/30/2023	570-133047-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	ND	ULRBA	UJ	L	µg/L	
5701330472	OUTFALL 018	Outfall018_20230330_Comp	3/30/2023	570-133047-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	ND	ULRBA	UJ	L	µg/L	
5701330472	OUTFALL 018	Outfall018_20230330_Comp	3/30/2023	570-133047-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	ND	ULR	UJ	L	µg/L	
5701330472	OUTFALL 018	Outfall018_20230330_Comp	3/30/2023	570-133047-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	ND	ULRBA	UJ	L	µg/L	
5701330472	OUTFALL 018	Outfall018_20230330_Comp	3/30/2023	570-133047-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	ND	ULRBA	UJ	L	µg/L	
5701330472	OUTFALL 018	Outfall018_20230330_Comp	3/30/2023	570-133047-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	ND	ULRBA	UJ	L	µg/L	
5701330472	OUTFALL 018	Outfall018_20230330_Comp	3/30/2023	570-133047-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	ND	ULRBA	UJ	L	µg/L	
5701330472	OUTFALL 018	Outfall018_20230330_Comp	3/30/2023	570-133047-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	ND	ULRBA	UJ	L	µg/L	
5701330472	OUTFALL 018	Outfall018_20230330_Comp	3/30/2023	570-133047-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	ND	ULRBA	UJ	L	µg/L	
5701330472	OUTFALL 018	Outfall018_20230330_Comp	3/30/2023	570-133047-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	ND	ULR	UJ	L	µg/L	
5701330472	OUTFALL 018	Outfall018_20230330_Comp	3/30/2023	570-133047-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	ND	ULRBA	UJ	L	µg/L	
5701330472	OUTFALL 018	Outfall018_20230330_Comp	3/30/2023	570-133047-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	2.1E-06	J,DXLR	J	L	µg/L	
5701330472	OUTFALL 018	Outfall018_20230330_Comp	3/30/2023	570-133047-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	ND	ULR	UJ	L	µg/L	
5701330472	OUTFALL 018	Outfall018_20230330_Comp	3/30/2023	570-133047-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	ND	ULR	UJ	L	µg/L	
5701330472	OUTFALL 018	Outfall018_20230330_Comp	3/30/2023	570-133047-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	ND	ULR	UJ	L	µg/L	
5701330472	OUTFALL 018	Outfall018_20230330_Comp	3/30/2023	570-133047-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	ND	ULR	UJ	L	µg/L	
5701330542	OUTFALL 008	Outfall008_20230330_Comp	3/30/2023	570-133054-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	ND	ULRBA	UJ	L	µg/L	
5701330542	OUTFALL 008	Outfall008_20230330_Comp	3/30/2023	570-133054-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2.7E-05	J,DXMB	UJ	BL	µg/L	Report ND at sample concentration
5701330542	OUTFALL 008	Outfall008_20230330_Comp	3/30/2023	570-133054-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	ND	ULR	UJ	L	µg/L	
5701330542	OUTFALL 008	Outfall008_20230330_Comp	3/30/2023	570-133054-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.4E-06	J,DXqMB	UJ	BL	µg/L	Report ND at sample concentration
5701330542	OUTFALL 008	Outfall008_20230330_Comp	3/30/2023	570-133054-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	ND	ULRBA	UJ	L	µg/L	
5701330542	OUTFALL 008	Outfall008_20230330_Comp	3/30/2023	570-133054-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	ND	ULRBA	UJ	L	µg/L	
5701330542	OUTFALL 008	Outfall008_20230330_Comp	3/30/2023	570-133054-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.0E-06	J,DXqLR	UJ	L*III	µg/L	Report ND at sample concentration
5701330542	OUTFALL 008	Outfall008_20230330_Comp	3/30/2023	570-133054-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	ND	ULRBA	UJ	L	µg/L	
5701330542	OUTFALL 008	Outfall008_20230330_Comp	3/30/2023	570-133054-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	ND	ULRBA	UJ	L	µg/L	
5701330542	OUTFALL 008	Outfall008_20230330_Comp	3/30/2023	570-133054-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1.5E-06	J,DXqLR	UJ	L*III	µg/L	Report ND at sample concentration
5701330542	OUTFALL 008	Outfall008_20230330_Comp	3/30/2023	570-133054-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	ND	ULRBA	UJ	L	µg/L	
5701330542	OUTFALL 008	Outfall008_20230330_Comp	3/30/2023	570-133054-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.9E-06	J,DXLR	J	L	µg/L	

TABLE 7
SYSTEM PERFORMANCE SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701330542	OUTFALL 008	Outfall008_20230330_Comp	3/30/2023	570-133054-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	ND	ULR	UJ	L	µg/L	
5701330542	OUTFALL 008	Outfall008_20230330_Comp	3/30/2023	570-133054-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	ND	ULR	UJ	L	µg/L	
5701330542	OUTFALL 008	Outfall008_20230330_Comp	3/30/2023	570-133054-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	ND	ULR	UJ	L	µg/L	
5701330542	OUTFALL 008	Outfall008_20230330_Comp	3/30/2023	570-133054-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	ND	ULR	UJ	L	µg/L	
5701330592	OUTFALL 009	Outfall009_20230330_Comp	3/30/2023	570-133059-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	9.8E-06	J,DXMB	UJ	BL	µg/L	Report ND at sample concentration
5701330592	OUTFALL 009	Outfall009_20230330_Comp	3/30/2023	570-133059-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	8.5E-05	J,DXqMB	UJ	BL	µg/L	Report ND at sample concentration
5701330592	OUTFALL 009	Outfall009_20230330_Comp	3/30/2023	570-133059-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	3.4E-06	J,DXqMB	UJ	BL	µg/L	Report ND at sample concentration
5701330592	OUTFALL 009	Outfall009_20230330_Comp	3/30/2023	570-133059-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	7.7E-06	J,DXqMB	UJ	BL	µg/L	Report ND at sample concentration
5701330592	OUTFALL 009	Outfall009_20230330_Comp	3/30/2023	570-133059-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	ND	ULRBA	UJ	L	µg/L	
5701330592	OUTFALL 009	Outfall009_20230330_Comp	3/30/2023	570-133059-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	ND	ULRBA	UJ	L	µg/L	
5701330592	OUTFALL 009	Outfall009_20230330_Comp	3/30/2023	570-133059-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.4E-06	J,DXqLR	UJ	L*III	µg/L	Report ND at sample concentration
5701330592	OUTFALL 009	Outfall009_20230330_Comp	3/30/2023	570-133059-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	ND	ULRBA	UJ	L	µg/L	
5701330592	OUTFALL 009	Outfall009_20230330_Comp	3/30/2023	570-133059-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.1E-07	J,DXqLR	UJ	L*III	µg/L	Report ND at sample concentration
5701330592	OUTFALL 009	Outfall009_20230330_Comp	3/30/2023	570-133059-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	ND	ULR	UJ	L	µg/L	
5701330592	OUTFALL 009	Outfall009_20230330_Comp	3/30/2023	570-133059-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	5.2E-07	J,DXqLR	UJ	L*III	µg/L	Report ND at sample concentration
5701330592	OUTFALL 009	Outfall009_20230330_Comp	3/30/2023	570-133059-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.8E-06	J,DXqLR	UJ	L*III	µg/L	Report ND at sample concentration
5701330592	OUTFALL 009	Outfall009_20230330_Comp	3/30/2023	570-133059-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	ND	ULR	UJ	L	µg/L	
5701330592	OUTFALL 009	Outfall009_20230330_Comp	3/30/2023	570-133059-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	ND	ULR	UJ	L	µg/L	
5701330592	OUTFALL 009	Outfall009_20230330_Comp	3/30/2023	570-133059-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	ND	ULR	UJ	L	µg/L	
5701330592	OUTFALL 009	Outfall009_20230330_Comp	3/30/2023	570-133059-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	ND	ULR	UJ	L	µg/L	
5701331022	OUTFALL 001	Outfall001_20230330_Comp	3/30/2023	570-133102-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	5.7E-06	J,DXqMB	UJ	BL	µg/L	Report ND at sample concentration
5701331022	OUTFALL 001	Outfall001_20230330_Comp	3/30/2023	570-133102-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3.7E-05	J,DXMB	UJ	BL	µg/L	Report ND at sample concentration
5701331022	OUTFALL 001	Outfall001_20230330_Comp	3/30/2023	570-133102-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	4.3E-06	J,DXqMB	UJ	BL	µg/L	Report ND at sample concentration
5701331022	OUTFALL 001	Outfall001_20230330_Comp	3/30/2023	570-133102-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	6.6E-06	J,DXMB	UJ	BL	µg/L	Report ND at sample concentration
5701331022	OUTFALL 001	Outfall001_20230330_Comp	3/30/2023	570-133102-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	ND	ULRBA	UJ	L	µg/L	
5701331022	OUTFALL 001	Outfall001_20230330_Comp	3/30/2023	570-133102-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	ND	ULRBA	UJ	L	µg/L	
5701331022	OUTFALL 001	Outfall001_20230330_Comp	3/30/2023	570-133102-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	ND	ULRBA	UJ	L	µg/L	
5701331022	OUTFALL 001	Outfall001_20230330_Comp	3/30/2023	570-133102-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	ND	ULRBA	UJ	L	µg/L	
5701331022	OUTFALL 001	Outfall001_20230330_Comp	3/30/2023	570-133102-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	ND	ULRBA	UJ	L	µg/L	
5701331022	OUTFALL 001	Outfall001_20230330_Comp	3/30/2023	570-133102-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	ND	ULR	UJ	L	µg/L	
5701331022	OUTFALL 001	Outfall001_20230330_Comp	3/30/2023	570-133102-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	ND	ULRBA	UJ	L	µg/L	
5701331022	OUTFALL 001	Outfall001_20230330_Comp	3/30/2023	570-133102-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.1E-06	J,DXqLR	UJ	L*III	µg/L	Report ND at sample concentration
5701331022	OUTFALL 001	Outfall001_20230330_Comp	3/30/2023	570-133102-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	ND	ULR	UJ	L	µg/L	
5701331022	OUTFALL 001	Outfall001_20230330_Comp	3/30/2023	570-133102-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	ND	ULR	UJ	L	µg/L	
5701331022	OUTFALL 001	Outfall001_20230330_Comp	3/30/2023	570-133102-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	ND	ULR	UJ	L	µg/L	
5701331022	OUTFALL 001	Outfall001_20230330_Comp	3/30/2023	570-133102-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	ND	ULR	UJ	L	µg/L	

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Data Usability Summary Report

Project Name: The Boeing Company, Santa Susana Field Laboratory, NPDES

Project Description: First Quarter 2023 Stormwater Samples

Sample Date(s): 1 through 31 January 2023

Analytical Laboratory: Eurofins Calscience, Tustin, CA

Validation Performed by: Sean Fischer

Validation Reviewed by: Vanessa Godard

Validation Date: 10 February 2023

Haley & Aldrich, Inc. prepared this Data Usability Summary Report (DUSR) to summarize the review and validation of the analytical results for Sample Delivery Group(s) (SDG) listed. This DUSR is organized into the following sections:

1. **Level II, First Quarter 2023**
2. **Level IV, First Quarter 2023**
3. **Explanations**
4. **Glossary**
5. **Abbreviations**
6. **Qualifiers**

References

This data validation and usability assessment was performed per the guidance and requirements established by the United States Environmental Protection Agency (USEPA) using the following reference materials:

- USEPA Contract Laboratory Program (CLP) NFG for Chlorinated Dioxin/Furan Data Review
- The project-specific Quality Assurance Project Plan (QAPP), herein referred to as the specified limits (see references section).

Data reported in this sampling event were reported to the laboratory estimated detection limit (EDL) or method detection limit (MDL). Results found between the EDL or MDL and laboratory reporting limit (RL) are flagged J as estimated.

Sample data were qualified in accordance with the laboratory's standard operating procedures (SOP). The results presented in each laboratory report were found to be compliant with the data quality objectives (DQO) for the project and therefore usable; any exceptions are noted in the following pages.

1. Level II, First Quarter 2023

1.1 SAMPLE MANAGEMENT

This DUSR summarizes the review of SDG numbers listed in Table 1.

Samples were collected, preserved, and shipped following standard chain of custody (COC) protocol.

- Method SM9223B subcontracted to Enthalpy Analytical in Orange, California.
- Method E1613B subcontracted to Eurofins Sacramento in West Sacramento, California.
- Method EPA-821-R-02-013 subcontracted to Aquatic Bioassay & Consulting Laboratories, Inc. in Ventura, California.

Samples were also received appropriately, identified correctly, and analyzed according to the COC. Issues noted with sample management are listed below:

- For SDGs 570-122377-2, 570-122379-2, 570-122381-2, 570-122386-2, 570-122390-2, 570-122423-1, 570-122425-1, 570-122503-1, 570-122522-2, 570-122671-1, 570-122678-2, 570-122682-2, 570-122986-1, 570-123237-1, 570-123256-2, 570-123391-2, 570-123393-2, 570-123414-2, 570-123417-2, 570-123418-2, and 570-124079-1, custody seals were not used when transported between subcontracted laboratories.
- SDG 570-122386-2: Sample name should be Outfall002_20230101_Grab in subcontracted lab report. Incorrectly logged as Outfall002_202320101_Grab.
- SDG 570-122671-1: Sample name should be logged as Outfall002_20230105_Grab in lab report and subcontracted lab report.
- SDG 570-123393-2: COC has a sample date/time of 1/10/23 09:30, but subcontracted COCs have a sample date/time of 1/10/23 17:55.

Analyses were performed on the samples shown in Table 2. Analytical methods performed are displayed in Table 3.

1.2 HOLDING TIMES/PRESERVATION

The samples arrived at the laboratory at the proper temperature and were prepared and analyzed within the holding time and preservation criteria specified per method protocol, with exceptions listed in Table 4.

1.3 REPORTING LIMITS AND SAMPLE DILUTIONS

The RLs for the samples within this SDG met or were below the minimum reporting limit (RL) requirements specified by the project specific QAPP.

1.4 SURROGATE RECOVERY COMPLIANCE

Refer to section E 1.2. The percent recovery (%R) for each surrogate compound added to each project sample were determined to be within the laboratory specified quality control (QC) limits.

1.5 LABORATORY CONTROL SAMPLES

Refer to section E 1.3. Compounds associated with the laboratory control samples/laboratory control sample duplicates (LCS/LCSD) analyses associated with client samples exhibited recoveries and relative percent differences (RPDs) within the specified limits.

1.6 MATRIX SPIKE SAMPLES

Refer to section E 1.4. No client samples were used for matrix spike/matrix spike duplicate (MS/MSD) analysis in this SDG.

1.7 BLANK SAMPLE ANALYSIS

Refer to section E 1.5. Method blank samples had no detections, indicating that no contamination from laboratory activities occurred, with exceptions listed in Table 5.

- SDGs 570-124392-2, 570-124868-2, 570-124873-2, 570-124890-2, and 570-124891-2: A reanalysis method blank was not run on analyte 2,3,7,8-TCDF, though there was a reanalysis result for 2,3,7,8-TCDF for the client sample. The reanalysis sample results for 2,3,7,8-TCDF were non-detect, so the samples would not be affected.

1.8 DUPLICATE SAMPLE ANALYSIS

Refer to section E 1.6. No client samples were used for laboratory duplicate analysis.

No field duplicates were collected in this data set.

1.9 PRECISION AND ACCURACY

Refer to section E 1.7. Where required by the method, some measurement of analytical accuracy and precision was reported for each method with the site samples.

1.10 DIOXIN/FURAN ESTIMATED MAXIMUM POSSIBLE CONCENTRATION (EMPC)

Refer to section E 1.9. A result previously qualified as a non-detect for method blank contamination was not further qualified as an EMPC. The EMPC flags reported by the laboratory are listed in Table 6.

1.11 COMPOUND IDENTIFICATION

The second-column confirmation analysis for isomer 2,3,7,8-TCDF did not confirm the initial result for samples listed in Table 7. As the confirmation column is more specific for the detection of 2,3,7,8-TCDF, the confirmation results were retained, and the initial result rejected (R) as duplicate data.

1.12 SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The results presented in this report were found to comply with the data quality objectives for the project and the guidelines specified by the analytical method. Based on the review of this report, the data are useable and acceptable except for rejected data noted in Table 3. A summary of qualifiers applied to this data set is shown in Table 8.

2. Level IV, First Quarter 2023

2.1 SAMPLE MANAGEMENT

This DUSR summarizes the review of SDG number 570-123653-2, dated 6 February 2023 and 570-123653-6 dated 3 February 2023. Samples were collected, preserved, and shipped following standard COC protocol.

- Method E1613B subcontracted to Eurofins Sacramento in West Sacramento, California.
- Method EPA-821-R-02-013 subcontracted to Aquatic Bioassay & Consulting Laboratories, Inc in Ventura, California.

Samples were also received appropriately, identified correctly, and analyzed according to the COC. Issues noted with sample management are listed below:

Analyses were performed on the following samples:

Sample ID	Sample Type	Lab ID	Sample Date	Matrix	Methods
Outfall010_20230111_Comp	N	570-123653-1	01/11/2023	WM	A, B

Method Holding Times			
A.	E1613B	Dioxins/Furans*	1 year, unpreserved
B.	EPA-821-R-02-013	Chronic Toxicity**	36 hours for liquid, unpreserved

** Method E1613B subcontracted to Eurofins Sacramento in West Sacramento, CA.*
*** Method EPA-821-R-02-013 subcontracted to Aquatic Bioassay & Consulting Laboratories, Inc in Ventura, CA.*

2.2 CASE NARRATIVE

The laboratory report case narrative lists various additional quality control issues such as internal standard exceedances and initial calibration verification (ICV) and/or continuing calibration verification (CCV) exceedances:

- EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: Outfall010_20230111_Comp (570-123653-1), (CCV 320-651543/2) and (MB 320-649091/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

2.3 HOLDING TIMES/PRESERVATION

The samples arrived at the laboratory at the proper temperature and were prepared and analyzed within the holding time and preservation criteria specified per method protocol.

2.4 REPORTING LIMITS AND SAMPLE DILUTIONS

The RLs for the samples within this SDG met or were below the minimum RL requirements specified by the project specific QAPP.

2.5 SURROGATE RECOVERY COMPLIANCE

Refer to section E 1.2. The %R for each surrogate compound added to each project sample were determined to be within the laboratory specified QC limits.

2.6 LABORATORY CONTROL SAMPLES

Refer to section E 1.3. Compounds associated with the LCS/LCSD analyses associated with client samples exhibited recoveries and RPDs within the specified limits.

2.7 MATRIX SPIKE SAMPLES

Refer to section E 1.4. No client samples were used for MS/MSD analysis in this SDG.

2.8 BLANK SAMPLE ANALYSIS

Refer to section E 1.5. Method blank samples had no detections, indicating that no contamination from laboratory activities occurred, with exceptions listed in Table 5.

2.9 DUPLICATE SAMPLE ANALYSIS

Refer to section E 1.6. No client samples were used for laboratory duplicate analysis.

No field duplicates were collected in this data set.

2.10 PRECISION AND ACCURACY

Refer to section E 1.7. Where required by the method, some measurement of analytical accuracy and precision was reported for each method with the site samples.

2.11 DIOXIN/FURAN ESTIMATED MAXIMUM POSSIBLE CONCENTRATION (EMPC)

Refer to section E 1.9. A result previously qualified as a non-detect for method blank contamination was not further qualified as an EMPC. The EMPC flags reported by the laboratory are listed in Table 6.

2.12 MASS SPECTROMETER PERFORMANCE

The mass spectrometer performance was evaluated prior to instrument calibration and found to be acceptable with the static resolving power >10,000.

2.13 CHROMATOGRAPHIC RESOLUTION/GC COLUMN PERFORMANCE

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was analyzed prior to the initial calibration sequence and at the beginning of each analytical sequence. The GC column performance in the calibrations was acceptable, with the

height of the valley between the closely eluting isomers and 2,3,7,8-TCDD/TCDF reported as <25%.

2.14 INITIAL CALIBRATION

Refer to section E 1.20. Proper concentrations for standards were used for the instruments and Relative Response Factors (RRF) and Percent Relative Standard Deviation (%RSD) were within the specified limits.

2.15 INITIAL AND CONTINUING CALIBRATION VERIFICATION

Refer to section E 1.21. The %R reported for Method 1613B were within the specified limits.

2.16 INTERNAL STANDARDS

Refer to section E 1.22. Isotope dilution recovery limits were reviewed and found to be within the specified limits.

2.17 SAMPLE RESULT VERIFICATION

A portion of the sample result(s) were tracked through the relevant sample preparation steps, raw data outputs, transcriptions, conversions and/or calculations and have been confirmed to be accurate and representative of the sample conditions.

2.18 COMPOUND IDENTIFICATION

The second-column confirmation analysis for isomer 2,3,7,8-TCDF did not confirm the initial result for samples listed in Table 7. As the confirmation column is more specific for the detection of 2,3,7,8-TCDF, the confirmation results were retained, and the initial result rejected (R) as duplicate data.

2.19 SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The results presented in this report were found to comply with the data quality objectives for the project and the guidelines specified by the analytical method. Based on the review of this report, the data are useable and acceptable except for rejected data noted in Table 7. A summary of qualifiers applied to this data set is shown in Table 8.

3. Explanations

The following explanations include more detailed information regarding each of the sections in the DUSR above. Not all sections in the Explanations are represented:

- E 1.2 Surrogate Recovery Compliance
  - Surrogates, also known as system monitoring compounds, are compounds added to each sample prior to sample preparation to determining the efficiency of the extraction procedure by evaluating the percent recovery (%R) of the compounds.
- E 1.3 Laboratory Control Samples
  - The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) analyses are used to assess the precision and accuracy of the analytical method independent of matrix interferences.
- E 1.4 Matrix Spike Samples
  - Matrix spike/matrix spike duplicate (MS/MSD) data are used to assess the precision and accuracy of the analytical method and evaluate the effects of the sample matrix on the sample preparation procedures and measurement methodologies.
  - For inorganic methods, when a matrix spike recovery falls outside of the control limits and the sample result is less than four times the spike added, a post digestion spike (PDS) is performed.
- E 1.5 Blank Sample Analysis
  - Method blanks are prepared by the analytical laboratory and analyzed concurrently with the project samples to assess possible laboratory contamination.
- E 1.6 Laboratory Duplicate Sample Analysis
  - The laboratory duplicate sample analysis is used by the laboratory at the time of the analysis to demonstrate acceptable method precision. The RPD or absolute difference was evaluated for each duplicate sample pair to monitor the reproducibility of the data.
- E 1.7 Precision and Accuracy
  - Precision measures the reproducibility of repetitive measurements. In a laboratory environment, this will be measured by determining the relative percent difference (RPD) found between a primary and a duplicate sample. This can be an LCS/LCSD pair, a MS/MSD pair, a laboratory duplicate performed on a site sample, or a field duplicate collected and analyzed concurrently with a site sample.
  - Accuracy is a statistical measurement of the correctness of a measured value and includes components of random error (variability caused by imprecision) and systematic error. In a laboratory environment, this will be measured by determining the percent recovery (%R) of certain spiked compounds. This can be assessed using LCS, blank spike (BS), MS, and/or surrogate recoveries.

- E 1.9 Dioxin/Furan Estimated Maximum Possible Concentration
  - An Estimated Maximum Possible Concentration (EMPC) is a worst-case estimate of the concentration for a dioxin/furan based on all identification criteria being met except the ion abundance ratio criteria, or if a peak representing a chlorinated diphenyl ether was detected.
- E 1.20 Initial Calibration
  - Organic methods require an initial calibration to ensure the instrument is capable of producing acceptable qualitative and quantitative data. Standards of varying concentrations are run to create a calibration curve, which is then used to ensure the validity of compound quantitation.
  - Inorganic methods require an Initial Calibration to ensure the instrument is capable of producing acceptable qualitative and quantitative data. Instruments should be calibrated each time the instrument is set up and after CCV failure. A blank and at least five standards of varying concentrations should be run to create a calibration curve. At least one of these must be at or below the RL but above the method detection limit (MDL).
  - The curve must have a correlation coefficient of greater than or equal to 0.995 and the calculated percent differences (%D) for all non-zero standards must be within ±30 percent of the true value.
- E 1.21 Initial and Continuing Calibration Verification
  - Organic methods require an additional ICV and CCV to ensure that the instrument continues to meet the sensitivity and linearity criteria to produce acceptable qualitative and quantitative data throughout each analytical sequence. CCVs must be run at the beginning and end of every 12-hour period of operation.
  - Inorganic methods require an ICV and CCV to ensure that the instrument continues to meet the sensitivity and linearity criteria to produce acceptable qualitative and quantitative data throughout each analytical sequence. Initial calibrations must be run each time the instrument is set up and after each CCV failure. ICVs are analyzed immediately after initial calibration to verify ICAL accuracy, and CCVs are analyzed every two hours during an analytical sequence. %R is reported and must be within the specified limits (90 to 110 percent).
- E 1.22 Internal Standards
  - Internal standards are compounds added to each sample by the laboratory prior to volatile metals sample analysis to ensure that instrument sensitivity and response are stable during each analysis.
  - Internal standards are compounds added to each sample by the laboratory prior to metals sample analysis to ensure that instrument sensitivity and response are stable during each analysis. The lab uses a single internal standard to make sure they are getting good intake of the sample into the instrument. Corrections are not made to any of the elements' responses based on this standard.

4. Glossary

Not all of the following symbols, acronyms, or qualifiers occur in this document.

- Sample Types:
  - EB Equipment Blank Sample
  - FB Field Blank Sample
  - FD Field Duplicate Sample
  - N Primary Sample
  - TB Trip Blank Sample
- Units:
  - % SURVIVAL percent survival
  - µg/L microgram per liter
  - mg/kg milligrams per kilogram
  - mg/L milligram per liter
  - mL/L milliliters per liter
  - mpn/100mL most probable number per 100 milliliters
  - NTU nephelometric turbidity unit
  - pCi/L picocuries per liter
  - umhos/cm micromhos per centimeter
- Matrices:
  - WM Stormwater
  - WMQ Water Quality control matrix
- Table Footnotes:
  - NA Not applicable
  - ND Non-detect
  - NR Not reported
- Common Symbols:
  - % percent
  - < less than
  - ≤ less than or equal to
  - > greater than
  - ≥ greater than or equal to
  - = equal
  - °C degrees Celsius
  - ± plus or minus
  - ~ approximately
  - x times (multiplier)
- Fractions:
  - D Dissolved (filtered)
  - N Normal (method cannot be filtered)
  - T Total (unfiltered)

5. Abbreviations

%D	Percent Difference
%R	Percent Recovery
%RSD	Percent Relative Standard Deviation
2s	2 sigma
4,4-DDT	4 4-dichlorodiphenyltrichloroethane
Abs Diff	Absolute Difference
amu	atomic mass unit
BPJ	Best Professional Judgement
BS	Blank Spike
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CCVL	Continuing Calibration Verification Low
COC	Chain of Custody
COM	Combined Isotope Calculation
Cr (VI)	Hexavalent Chromium
CRI	Collision Reaction Interface
DQO	data quality objective
DUSR	Data Usability Summary Report
EMPC	Estimated Maximum Possible Concentration
FBK	Field Blank Contamination
FDP	Field Duplicate
GC	Gas Chromatograph
GC/MS	Gas Chromatography/Mass Spectrometry
GPC	Gel Permeation Chromatography
HCl	Hydrochloric Acid
ICAL	Initial Calibration
ICB	Initial Calibration Blank
ICP/MS	Inductively Coupled Plasma/ Mass Spectrometry
ICV	Initial Calibration Verification
ICVL	Initial Calibration Verification Low
IPA	Isopropyl Alcohol
LC	Laboratory Control
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate
MDC	Minimum Detectable Concentration
MDL	Laboratory Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NFG	National Functional Guidelines
NH_3	Ammonia
PCB	Polychlorinated Biphenyl
PDS	Post Digestion Spike
PEM	Performance Evaluation Mixture
QAPP	Quality Assurance Project Plan
QC	Quality Control
QSM	Quality Systems Manual
R^2	R-squared value
Ra-226	Radium-226
Ra-228	Radium-228
RESC	Resolution Check Measure
RER	Relative Error Ratio
RL	Laboratory Reporting Limit
RPD	Relative Percent Difference
RRF	Relative Response Factors
RT	Retention Time
SAP	sampling analysis plan
SDG	Sample Delivery Group
SIM	Selected ion monitoring
SOP	Laboratory Standard Operating Procedures
SPE	Solid Phase Extraction
SVOC	Semi-Volatile Organic Compounds
TIC	Tentatively Identified Compound
TKN	Total Kjeldahl Nitrogen
TPH	Total Petroleum Hydrocarbon
TPU	Total Propagated Uncertainty
amu	atomic mass unit
USEPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compounds

6. Qualifiers

The qualifiers below are from the USEPA National Functional Guidelines and the data in the DUSR may contain these qualifiers:

- Laboratory Qualifiers:

BA	Relative percent difference out of control.
BU	Analyzed out of holding time.
BV	Sample received after holding time expired.
EY	Result exceeds normal dynamic range; reported as a minimum estimate.
F1	MS and/or MSD recovery exceeds control limits.
G	The Sample MDC is greater than the requested RL.
J,DX	Results found between the EDL or MDL and laboratory RL.
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS).
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS).
LQ	LCS/LCSD recovery above method control limits.
MB	Analyte present in the method blank.
PI	Primary and confirm results varied by > than 40% RPD.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio; the measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.
U	Result is less than the sample detection limit.

- Validation Notes:

--	Based on validation of the data, a qualifier was not required.
*1	Improper preservation of sample.
*III	Unusual problems found with the data that have been described in the validation report.
B	Laboratory method blank contamination.
D	The analysis with this flag should not be used because another more technically sound analysis is available.
DNQ	Detected but not quantified (constituent value greater than or equal to the laboratory method detection limit and less than the laboratory reporting limit).
E	Duplicates show poor agreement.
H	Holding times were exceeded.
L1	Laboratory control standard (LCS)/laboratory control standard duplicate (LCSD), relative percent difference (RPD) was outside the control limit.
Q	Matrix spike (MS) recovery outside of control limits.
RPD	Pesticides and PCB Confirmation Column RPD Exceeded.

- Validation Qualifiers:

=	No Qualifier.
J	The compound was positively identified; however, the associated numerical value is an estimated concentration only.
J-	The result is an estimated quantity, but the result may be biased low.
J+	The result is an estimated quantity, but the result may be biased high.
R	The sample results were rejected as unusable; the compound may or may not be present in the sample.
U	The compound was analyzed for but not detected. The associated value is either the compound quantitation limit if not detected by the analytical instrument or could be the reported or blank concentration if qualified by blank contamination. This can also be displayed as less than the associated compound quantitation limit (<RL or <MDL), or “ND”.
UJ	The compound was not detected above the reported sample quantitation limit; however, the reported limit is estimated and may or may not represent the actual limit of quantitation.

References

1. United States Environmental Protection Agency (USEPA), 2011. USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review. EPA-540-R-11-016. September.
2. Haley & Aldrich, Inc, 2015. Quality Assurance Project Field Plan for Santa Susana Field Laboratory Stormwater Sampling Program. December.

TABLE 1
SAMPLE DELIVERY GROUP NUMBERS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#
570-122377-2
570-122377-3
570-122379-2
570-122381-2
570-122381-6
570-122386-2
570-122390-2
570-122390-3
570-122423-1
570-122425-1
570-122503-1
570-122522-2
570-122671-1
570-122678-2
570-122682-2
570-122945-2
570-122945-6
570-122959-2
570-122986-1
570-123016-2
570-123016-5
570-123038-2
570-123038-3
570-123237-1
570-123256-2
570-123391-2
570-123391-4
570-123393-2
570-123393-3
570-123414-2
570-123414-4
570-123417-2
570-123650-2
570-123650-4
570-123665-2
570-123665-4
570-123670-2
570-123670-3
570-124079-1
570-124230-2
570-124233-2
570-124239-2
570-124243-2
570-124247-2
570-124388-1
570-124392-2
570-124868-2
570-124873-2
570-124887-2
570-124890-2
570-124891-2
570-124898-2
570-125839-2
570-125840-2
570-124392-4

TABLE 2
SAMPLE MANAGEMENT
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Sample ID	Sample Type	Lab ID	Sample Date	Matrix	Methods
Outfall002_20230103_Grab	N	476417-001*	1/3/2023	WM	A
ArroyoSimi_20230103	N	476419-001*	1/3/2023	WM	A
Outfall009_20230101_Grab	N	476421-001*	1/1/2023	WM	A
Outfall002_20230101_Grab	N	476424-001*	1/1/2023	WM	A
ArroyoSimi_20230101_Grab	N	476426-001*	1/1/2023	WM	A
Outfall002_20230104_Grab	N	476538-001*	1/4/2023	WM	A
Outfall018_20230104_Grab	N	476539-001*	1/4/2023	WM	A
Outfall002_20230105_Grab	N	476658-001*	1/5/2023	WM	A
Outfall008_20230105_Grab	N	476659-001*	1/5/2023	WM	A
Outfall001_20230105_Grab	N	476660-001*	1/5/2023	WM	A
Outfall002_20230106_Grab	N	476773-001*	1/6/2023	WM	A
ArroyoSimi_20230109	N	476865-001*	1/9/2023	WM	A
Outfall011_20230108_Grab	N	476867-001*	1/8/2023	WM	A
Outfall010_20230110_Grab	N	477186-001*	1/10/2023	WM	A
ArroyoSimi_20230113	N	477410-001*	1/13/2023	WM	A
ArroyoSimi_20230117	N	477666-001*	1/17/2023	WM	A
ArroyoSimi_20230101_Grab	N	570-122377-1	1/1/2023	WM	B
Outfall009_20230102_Comp	N	570-122381-1	1/2/2023	WM	B, C
Outfall002_20230102_Comp	N	570-122390-2	1/2/2023	WM	B, C
Outfall008_20230106_Comp	N	570-122945-1	1/6/2023	WM	B, C
Outfall002_20230106_Comp	N	570-122959-1	1/6/2023	WM	B
Outfall001_20230106_Comp	N	570-123016-1	1/6/2023	WM	B, C
Outfall018_20230106_Comp	N	570-123038-2	1/6/2023	WM	B, C
Outfall011_20230110_Comp	N	570-123391-2	1/10/2023	WM	B, C
Outfall009_20230110_Comp	N	570-123393-1	1/10/2023	WM	B, C
Outfall002_20230110_Comp	N	570-123414-1	1/10/2023	WM	B, C
Outfall001_20230111_Comp	N	570-123650-1	1/11/2023	WM	B, C
Outfall018_20230111_Comp	N	570-123665-1	1/11/2023	WM	B, C
Outfall008_20230111_Comp	N	570-123670-1	1/11/2023	WM	B, C
Outfall018_20230115_Comp	N	570-124230-1	1/15/2023	WM	B
Outfall008_20230115_Comp	N	570-124233-1	1/15/2023	WM	B
Outfall009_20230115_Comp	N	570-124239-1	1/15/2023	WM	B
Outfall001_20230115_Comp	N	570-124243-1	1/15/2023	WM	B
Outfall002_20230115_Comp	N	570-124247-1	1/15/2023	WM	B
Outfall011_20230117_Comp	N	570-124392-1	1/17/2023	WM	B, C
Outfall001_20230120_Comp	N	570-124868-1	1/20/2023	WM	B
Outfall011_20230120_Comp	N	570-124873-1	1/20/2023	WM	B
Outfall002_20230121_Comp	N	570-124887-1	1/21/2023	WM	B
Outfall008_20230121_Comp	N	570-124890-1	1/21/2023	WM	B
Outfall009_20230121_Comp	N	570-124891-1	1/21/2023	WM	B
Outfall018_20230121_Comp	N	570-124898-1	1/21/2023	WM	B
Outfall009_20230131_Comp	N	570-125839-1	1/31/2023	WM	B
Outfall002_20230131_Comp	N	570-125840-1	1/31/2023	WM	B

Notes:
** Method SM9223B subcontracted to Enthalpy Analytical in Orange, California.*

TABLE 3
METHOD HOLDING TIMES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Method Holding Times			
A.	SM9223B	Escherichia coli (E. coli)*	8 hours for liquid, preserved
B.	E1613B	Dioxins/Furans**	1 year, unpreserved
C.	EPA-821-R-02-013	Chronic Toxicity***	36 hours for liquid, unpreserved

Notes:

** Method SM9223B subcontracted to Enthalpy Analytical in Orange, California.*

*** Method E1613B subcontracted to Eurofins Sacramento in West Sacramento, California.*

**** Method EPA-821-R-02-013 subcontracted to Aquatic Bioassay & Consulting Laboratories, Inc in Ventura, California.*

TABLE 4
HOLDING TIMES EXCEPTIONS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Method	Matrix	Holding Time	Preservation	Sample ID, Violation, Qualification
SM9223B	Water	8 hours for liquid, preserved	Cool to ≤ 6 °C; Na2S2O3; No Headspace	The following samples were analyzed outside the holding time and qualified “J”: ArroyoSimi_20230101_Grab, Outfall009_20230101_Grab, Outfall002_20230101_Grab, Outfall002_20230104_Grab, ArroyoSimi_20230109, Outfall011_20230108_Grab, Outfall010_20230110_Grab, ArroyoSimi_20230113, ArroyoSimi_20230117
EPA-821-R-02-013	Water	36 hours for liquid, unpreserved	Cool to ≤ 6 °C	The following sample was received and analyzed by the lab beyond the holding time and qualified "J": Outfall011_20230117_Comp

TABLE 5
METHOD BLANKS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Blank Type	Batch ID	Analyte Detected in Blank	Concentration (ug/L)	Qualifier	Affected Samples
Method Blank	648570	1,2,3,7,8-PeCDF	0.00000179 J,DX q	Result U	ArroyoSimi_20230101_Grab, Outfall009_20230102_Comp
Method Blank	648570	1,2,3,7,8,9-HxCDD	0.00000222 J,DX	Result U	ArroyoSimi_20230101_Grab, Outfall009_20230102_Comp, Outfall002_20230102_Comp
Method Blank	648570	1,2,3,7,8,9-HxCDF	0.00000589 J,DX	Result U	ArroyoSimi_20230101_Grab, Outfall009_20230102_Comp, Outfall002_20230102_Comp
Method Blank	648570	1,2,3,4,6,7,8-HpCDD	0.00000429 J,DX	Result U	ArroyoSimi_20230101_Grab, Outfall009_20230102_Comp, Outfall002_20230102_Comp
Method Blank	648570	1,2,3,4,6,7,8-HpCDF	0.00000364 J,DX	Result U	ArroyoSimi_20230101_Grab, Outfall009_20230102_Comp, Outfall002_20230102_Comp
Method Blank	648570	1,2,3,4,7,8,9-HpCDF	0.00000306 J,DX q	Result U	ArroyoSimi_20230101_Grab, Outfall009_20230102_Comp, Outfall002_20230102_Comp
Method Blank	648570	OCDD	0.00000937 J,DX	NA	None, samples are >10x blank
Method Blank	648570	OCDF	0.00000201 J,DX	Result U	ArroyoSimi_20230101_Grab, Outfall009_20230102_Comp, Outfall002_20230102_Comp
Method Blank	650041	1,2,3,7,8-PeCDD	0.00000109 J,DX	Result U	Outfall002_20230106_Comp, Outfall001_20230106_Comp

TABLE 5
METHOD BLANKS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Blank Type	Batch ID	Analyte Detected in Blank	Concentration (ug/L)	Qualifier	Affected Samples
Method Blank	650041	1,2,3,7,8-PeCDF	0.00000239 J,DX	Result U	Outfall008_20230106_Comp, Outfall002_20230106_Comp, Outfall001_20230106_Comp, Outfall018_20230106_Comp
Method Blank	650041	2,3,4,7,8-PeCDF	0.00000133 J,DX	Result U	Outfall008_20230106_Comp, Outfall002_20230106_Comp, Outfall001_20230106_Comp, Outfall018_20230106_Comp
Method Blank	650041	1,2,3,4,7,8-HxCDD	0.00000338 J,DX	Result U	Outfall008_20230106_Comp, Outfall002_20230106_Comp, Outfall001_20230106_Comp, Outfall018_20230106_Comp
Method Blank	650041	1,2,3,6,7,8-HxCDD	0.00000160 J,DX	Result U	Outfall002_20230106_Comp, Outfall001_20230106_Comp
Method Blank	650041	1,2,3,7,8,9-HxCDD	0.00000210 J,DX	Result U	Outfall008_20230106_Comp, Outfall002_20230106_Comp, Outfall001_20230106_Comp, Outfall018_20230106_Comp
Method Blank	650041	1,2,3,4,7,8-HxCDF	0.00000258 J,DX	Result U	Outfall008_20230106_Comp, Outfall002_20230106_Comp, Outfall001_20230106_Comp, Outfall018_20230106_Comp
Method Blank	650041	1,2,3,6,7,8-HxCDF	0.00000147 J,DX	Result U	Outfall008_20230106_Comp, Outfall002_20230106_Comp, Outfall001_20230106_Comp

TABLE 5
METHOD BLANKS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Blank Type	Batch ID	Analyte Detected in Blank	Concentration (ug/L)	Qualifier	Affected Samples
Method Blank	650041	1,2,3,7,8,9-HxCDF	0.00000327 J,DX	Result U	Outfall008_20230106_Comp, Outfall002_20230106_Comp, Outfall001_20230106_Comp, Outfall018_20230106_Comp
Method Blank	650041	2,3,4,6,7,8-HxCDF	0.000000951 J,DX	Result U	Outfall008_20230106_Comp, Outfall002_20230106_Comp, Outfall001_20230106_Comp, Outfall018_20230106_Comp
Method Blank	650041	1,2,3,4,6,7,8-HpCDD	0.00000236 J,DX	Result U	Outfall008_20230106_Comp, Outfall001_20230106_Comp, Outfall018_20230106_Comp
Method Blank	650041	1,2,3,4,6,7,8-HpCDF	0.00000235 J,DX q	Result U	Outfall008_20230106_Comp, Outfall002_20230106_Comp, Outfall001_20230106_Comp, Outfall018_20230106_Comp
Method Blank	650041	1,2,3,4,7,8,9-HpCDF	0.00000153 J,DX	Result U	Outfall008_20230106_Comp, Outfall002_20230106_Comp, Outfall001_20230106_Comp, Outfall018_20230106_Comp
Method Blank	650041	OCDD	0.00000763 J,DX	Result U	Outfall008_20230106_Comp, Outfall018_20230106_Comp
Method Blank	650041	OCDF	0.00000335 J,DX	Result U	Outfall008_20230106_Comp, Outfall002_20230106_Comp, Outfall001_20230106_Comp, Outfall018_20230106_Comp

TABLE 5
METHOD BLANKS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Blank Type	Batch ID	Analyte Detected in Blank	Concentration (ug/L)	Qualifier	Affected Samples
Method Blank	650623	1,2,3,4,7,8-HxCDD	0.00000374 J,DX q	Result U	Outfall011_20230110_Comp, Outfall009_20230110_Comp, Outfall002_20230110_Comp, Outfall001_20230111_Comp
Method Blank	650623	1,2,3,6,7,8-HxCDD	0.00000237 J,DX q	Result U	Outfall011_20230110_Comp, Outfall009_20230110_Comp, Outfall002_20230110_Comp
Method Blank	650623	1,2,3,7,8,9-HxCDD	0.00000379 J,DX	Result U	Outfall011_20230110_Comp, Outfall009_20230110_Comp, Outfall001_20230111_Comp
Method Blank	650623	1,2,3,4,7,8-HxCDF	0.00000153 J,DX q	Result U	Outfall011_20230110_Comp, Outfall001_20230111_Comp
Method Blank	650623	1,2,3,6,7,8-HxCDF	0.00000246 J,DX	Result U	Outfall011_20230110_Comp, Outfall001_20230111_Comp
Method Blank	650623	1,2,3,7,8,9-HxCDF	0.00000228 J,DX q	Result U	Outfall011_20230110_Comp, Outfall002_20230110_Comp, Outfall001_20230111_Comp
Method Blank	650623	2,3,4,6,7,8-HxCDF	0.00000181 J,DX q	Result U	Outfall011_20230110_Comp, Outfall001_20230111_Comp
Method Blank	650623	1,2,3,4,6,7,8-HpCDD	0.00000536 J,DX	Result U	Outfall011_20230110_Comp, Outfall009_20230110_Comp, Outfall002_20230110_Comp, Outfall001_20230111_Comp

TABLE 5
METHOD BLANKS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Blank Type	Batch ID	Analyte Detected in Blank	Concentration (ug/L)	Qualifier	Affected Samples
Method Blank	650623	1,2,3,4,6,7,8-HpCDF	0.00000371 J,DX q	Result U	Outfall011_20230110_Comp, Outfall009_20230110_Comp, Outfall002_20230110_Comp, Outfall001_20230111_Comp
Method Blank	650623	1,2,3,4,7,8,9-HpCDF	0.00000407 J,DX	Result U	Outfall011_20230110_Comp
Method Blank	650623	OCDD	0.0000548 J,DX	Result U	Outfall011_20230110_Comp, Outfall009_20230110_Comp, Outfall002_20230110_Comp, Outfall001_20230111_Comp
Method Blank	650623	OCDF	0.0000116 J,DX	Result U	Outfall011_20230110_Comp, Outfall009_20230110_Comp, Outfall002_20230110_Comp, Outfall001_20230111_Comp
Method Blank	650047	1,2,3,7,8-PeCDD	0.000000800 J,DX	Result U	Outfall010_20230111_Comp, Outfall008_20230111_Comp
Method Blank	650047	1,2,3,7,8-PeCDF	0.000000544 J,DX q	Result U	Outfall010_20230111_Comp, Outfall008_20230111_Comp
Method Blank	650047	2,3,4,7,8-PeCDF	0.000000644 J,DX	Result U	Outfall010_20230111_Comp, Outfall018_20230111_Comp, Outfall008_20230111_Comp
Method Blank	650047	1,2,3,4,7,8-HxCDD	0.00000283 J,DX	Result U	Outfall010_20230111_Comp, Outfall018_20230111_Comp, Outfall008_20230111_Comp
Method Blank	650047	1,2,3,6,7,8-HxCDD	0.000000633 J,DX q	Result U	Outfall010_20230111_Comp, Outfall018_20230111_Comp, Outfall008_20230111_Comp

TABLE 5
METHOD BLANKS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Blank Type	Batch ID	Analyte Detected in Blank	Concentration (ug/L)	Qualifier	Affected Samples
Method Blank	650047	1,2,3,7,8,9-HxCDD	0.000000719 J,DX q	Result U	Outfall010_20230111_Comp, Outfall008_20230111_Comp
Method Blank	650047	1,2,3,4,7,8-HxCDF	0.000000820 J,DX	Result U	Outfall010_20230111_Comp, Outfall018_20230111_Comp, Outfall008_20230111_Comp
Method Blank	650047	1,2,3,6,7,8-HxCDF	0.000000777 J,DX q	Result U	Outfall010_20230111_Comp, Outfall018_20230111_Comp, Outfall008_20230111_Comp
Method Blank	650047	1,2,3,7,8,9-HxCDF	0.00000120 J,DX	Result U	Outfall010_20230111_Comp, Outfall018_20230111_Comp, Outfall008_20230111_Comp
Method Blank	650047	2,3,4,6,7,8-HxCDF	0.000000608 J,DX	Result U	Outfall010_20230111_Comp, Outfall018_20230111_Comp, Outfall008_20230111_Comp
Method Blank	650047	1,2,3,4,6,7,8-HpCDD	0.00000229 J,DX	Result U	Outfall018_20230111_Comp, Outfall008_20230111_Comp
Method Blank	650047	1,2,3,4,6,7,8-HpCDF	0.00000121 J,DX q	Result U	Outfall010_20230111_Comp, Outfall018_20230111_Comp, Outfall008_20230111_Comp
Method Blank	650047	1,2,3,4,7,8,9-HpCDF	0.000000899 J,DX	Result U	Outfall010_20230111_Comp, Outfall018_20230111_Comp, Outfall008_20230111_Comp
Method Blank	650047	OCDD	0.0000158 J,DX q	Result U	Outfall018_20230111_Comp, Outfall008_20230111_Comp

TABLE 5
METHOD BLANKS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Blank Type	Batch ID	Analyte Detected in Blank	Concentration (ug/L)	Qualifier	Affected Samples
Method Blank	650047	OCDF	0.00000284 J,DX	Result U	Outfall018_20230111_Comp, Outfall008_20230111_Comp
Method Blank	652038	2,3,7,8-TCDD	0.000000844 J,DX q	NA	None, samples are ND
Method Blank	652038	2,3,7,8-TCDF	0.000000804 J,DX q	NA	None, associated sample analysis rejected or samples are ND
Method Blank	652038	1,2,3,7,8-PeCDD	0.00000133 J,DX	Result U	Outfall018_20230115_Comp, Outfall008_20230115_Comp, Outfall009_20230115_Comp, Outfall001_20230115_Comp
Method Blank	652038	1,2,3,7,8-PeCDF	0.00000141 J,DX	Result U	Outfall018_20230115_Comp, Outfall008_20230115_Comp, Outfall001_20230115_Comp, Outfall002_20230115_Comp
Method Blank	652038	2,3,4,7,8-PeCDF	0.00000105 J,DX	Result U	Outfall018_20230115_Comp, Outfall008_20230115_Comp, Outfall001_20230115_Comp, Outfall002_20230115_Comp
Method Blank	652038	1,2,3,4,7,8-HxCDD	0.00000333 J,DX	Result U	Outfall018_20230115_Comp, Outfall008_20230115_Comp, Outfall009_20230115_Comp, Outfall001_20230115_Comp, Outfall002_20230115_Comp
Method Blank	652038	1,2,3,6,7,8-HxCDD	0.00000177 J,DX	Result U	Outfall018_20230115_Comp, Outfall008_20230115_Comp, Outfall009_20230115_Comp, Outfall001_20230115_Comp, Outfall002_20230115_Comp

TABLE 5
METHOD BLANKS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Blank Type	Batch ID	Analyte Detected in Blank	Concentration (ug/L)	Qualifier	Affected Samples
Method Blank	652038	1,2,3,7,8,9-HxCDD	0.00000192 J,DX	Result U	Outfall018_20230115_Comp, Outfall008_20230115_Comp, Outfall001_20230115_Comp, Outfall002_20230115_Comp
Method Blank	652038	1,2,3,4,7,8-HxCDF	0.00000144 J,DX	Result U	Outfall018_20230115_Comp, Outfall008_20230115_Comp, Outfall001_20230115_Comp, Outfall002_20230115_Comp
Method Blank	652038	1,2,3,6,7,8-HxCDF	0.00000140 J,DX	Result U	Outfall018_20230115_Comp, Outfall008_20230115_Comp, Outfall001_20230115_Comp, Outfall002_20230115_Comp
Method Blank	652038	1,2,3,7,8,9-HxCDF	0.00000126 J,DX q	Result U	Outfall018_20230115_Comp, Outfall008_20230115_Comp, Outfall001_20230115_Comp, Outfall002_20230115_Comp
Method Blank	652038	2,3,4,6,7,8-HxCDF	0.000000852 J,DX q	Result U	Outfall018_20230115_Comp, Outfall008_20230115_Comp, Outfall001_20230115_Comp, Outfall002_20230115_Comp
Method Blank	652038	1,2,3,4,6,7,8-HpCDD	0.00000347 J,DX q	Result U	Outfall018_20230115_Comp, Outfall008_20230115_Comp, Outfall009_20230115_Comp, Outfall001_20230115_Comp, Outfall002_20230115_Comp

TABLE 5
METHOD BLANKS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Blank Type	Batch ID	Analyte Detected in Blank	Concentration (ug/L)	Qualifier	Affected Samples
Method Blank	652038	1,2,3,4,6,7,8-HpCDF	0.00000196 J,DX q	Result U	Outfall018_20230115_Comp, Outfall008_20230115_Comp, Outfall009_20230115_Comp, Outfall001_20230115_Comp, Outfall002_20230115_Comp
Method Blank	652038	1,2,3,4,7,8,9-HpCDF	0.00000202 J,DX	Result U	Outfall018_20230115_Comp, Outfall008_20230115_Comp, Outfall001_20230115_Comp, Outfall002_20230115_Comp
Method Blank	652038	OCDD	0.0000106 J,DX	Result U	Outfall018_20230115_Comp, Outfall008_20230115_Comp
Method Blank	652038	OCDF	0.00000474 J,DX	Result U	Outfall018_20230115_Comp, Outfall008_20230115_Comp, Outfall009_20230115_Comp, Outfall001_20230115_Comp, Outfall002_20230115_Comp
Method Blank	652417	1,2,3,7,8-PeCDF	0.000000524 J,DX	Result U	Outfall011_20230117_Comp, Outfall001_20230120_Comp, Outfall008_20230121_Comp, Outfall009_20230121_Comp
Method Blank	652417	1,2,3,4,7,8-HxCDD	0.00000235 J,DX	Result U	Outfall011_20230117_Comp, Outfall001_20230120_Comp, Outfall011_20230120_Comp, Outfall002_20230121_Comp, Outfall008_20230121_Comp, Outfall009_20230121_Comp

TABLE 5
METHOD BLANKS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Blank Type	Batch ID	Analyte Detected in Blank	Concentration (ug/L)	Qualifier	Affected Samples
Method Blank	652417	1,2,3,6,7,8-HxCDD	0.000000472 J,DX	Result U	Outfall011_20230117_Comp, Outfall001_20230120_Comp, Outfall011_20230120_Comp, Outfall002_20230121_Comp, Outfall008_20230121_Comp, Outfall009_20230121_Comp
Method Blank	652417	1,2,3,7,8,9-HxCDD	0.000000555 J,DX q	Result U	Outfall011_20230117_Comp, Outfall001_20230120_Comp, Outfall011_20230120_Comp, Outfall002_20230121_Comp, Outfall008_20230121_Comp, Outfall009_20230121_Comp
Method Blank	652417	1,2,3,4,7,8-HxCDF	0.000000363 J,DX q	Result U	Outfall011_20230117_Comp, Outfall001_20230120_Comp, Outfall011_20230120_Comp, Outfall002_20230121_Comp, Outfall008_20230121_Comp, Outfall009_20230121_Comp
Method Blank	652417	1,2,3,6,7,8-HxCDF	0.000000299 J,DX q	Result U	Outfall001_20230120_Comp, Outfall008_20230121_Comp, Outfall009_20230121_Comp
Method Blank	652417	1,2,3,7,8,9-HxCDF	0.000000640 J,DX	Result U	Outfall011_20230117_Comp, Outfall001_20230120_Comp, Outfall011_20230120_Comp, Outfall002_20230121_Comp, Outfall008_20230121_Comp, Outfall009_20230121_Comp

TABLE 5
METHOD BLANKS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Blank Type	Batch ID	Analyte Detected in Blank	Concentration (ug/L)	Qualifier	Affected Samples
Method Blank	652417	2,3,4,6,7,8-HxCDF	0.000000315 J,DX q	Result U	Outfall011_20230117_Comp, Outfall001_20230120_Comp, Outfall002_20230121_Comp, Outfall008_20230121_Comp, Outfall009_20230121_Comp
Method Blank	652417	1,2,3,4,6,7,8-HpCDD	0.00000160 J,DX	Result U	Outfall011_20230117_Comp, Outfall001_20230120_Comp, Outfall011_20230120_Comp, Outfall002_20230121_Comp, Outfall008_20230121_Comp, Outfall009_20230121_Comp
Method Blank	652417	1,2,3,4,6,7,8-HpCDF	0.00000125 J,DX q	Result U	Outfall011_20230117_Comp, Outfall001_20230120_Comp, Outfall011_20230120_Comp, Outfall002_20230121_Comp, Outfall008_20230121_Comp, Outfall009_20230121_Comp
Method Blank	652417	1,2,3,4,7,8,9-HpCDF	0.000000762 J,DX	Result U	Outfall011_20230117_Comp, Outfall001_20230120_Comp, Outfall002_20230121_Comp, Outfall008_20230121_Comp, Outfall009_20230121_Comp
Method Blank	652417	OCDD	0.00000491 J,DX	Result U	Outfall001_20230120_Comp, Outfall002_20230121_Comp, Outfall008_20230121_Comp, Outfall009_20230121_Comp

TABLE 5
METHOD BLANKS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Blank Type	Batch ID	Analyte Detected in Blank	Concentration (ug/L)	Qualifier	Affected Samples
Method Blank	652417	OCDF	0.00000107 J,DX q	Result U	Outfall011_20230117_Comp, Outfall001_20230120_Comp, Outfall011_20230120_Comp, Outfall002_20230121_Comp, Outfall008_20230121_Comp, Outfall009_20230121_Comp
Method Blank	652545	2,3,7,8-TCDF	0.000000363 J,DX	NA	None, associated sample analysis rejected, or samples are ND
Method Blank	652545	1,2,3,7,8-PeCDD	0.000000447 J,DX	Result U	Outfall018_20230121_Comp, Outfall002_20230131_Comp
Method Blank	652545	1,2,3,7,8-PeCDF	0.000000684 J,DX	Result U	Outfall018_20230121_Comp, Outfall009_20230131_Comp, Outfall002_20230131_Comp
Method Blank	652545	2,3,4,7,8-PeCDF	0.000000486 J,DX	Result U	Outfall018_20230121_Comp, Outfall002_20230131_Comp
Method Blank	652545	1,2,3,4,7,8-HxCDD	0.00000167 J,DX q	Result U	Outfall018_20230121_Comp, Outfall009_20230131_Comp, Outfall002_20230131_Comp
Method Blank	652545	1,2,3,6,7,8-HxCDD	0.000000541 J,DX q	Result U	Outfall018_20230121_Comp, Outfall009_20230131_Comp, Outfall002_20230131_Comp
Method Blank	652545	1,2,3,7,8,9-HxCDD	0.000000824 J,DX q	Result U	Outfall018_20230121_Comp, Outfall009_20230131_Comp, Outfall002_20230131_Comp
Method Blank	652545	1,2,3,4,7,8-HxCDF	0.000000740 J,DX q	Result U	Outfall018_20230121_Comp, Outfall009_20230131_Comp, Outfall002_20230131_Comp

TABLE 5
METHOD BLANKS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Blank Type	Batch ID	Analyte Detected in Blank	Concentration (ug/L)	Qualifier	Affected Samples
Method Blank	652545	1,2,3,6,7,8-HxCDF	0.000000445 J,DX	Result U	Outfall018_20230121_Comp, Outfall009_20230131_Comp, Outfall002_20230131_Comp
Method Blank	652545	1,2,3,7,8,9-HxCDF	0.000000716 J,DX	Result U	Outfall018_20230121_Comp, Outfall009_20230131_Comp, Outfall002_20230131_Comp
Method Blank	652545	2,3,4,6,7,8-HxCDF	0.000000418 J,DX	Result U	Outfall018_20230121_Comp, Outfall009_20230131_Comp, Outfall002_20230131_Comp
Method Blank	652545	1,2,3,4,6,7,8-HpCDD	0.00000131 J,DX q	Result U	Outfall018_20230121_Comp, Outfall009_20230131_Comp, Outfall002_20230131_Comp
Method Blank	652545	1,2,3,4,6,7,8-HpCDF	0.00000171 J,DX	Result U	Outfall018_20230121_Comp, Outfall009_20230131_Comp, Outfall002_20230131_Comp
Method Blank	652545	1,2,3,4,7,8,9-HpCDF	0.000000934 J,DX	Result U	Outfall018_20230121_Comp, Outfall002_20230131_Comp
Method Blank	652545	OCDD	0.00000304 J,DX q	Result U	Outfall018_20230121_Comp, Outfall009_20230131_Comp, Outfall002_20230131_Comp
Method Blank	652545	OCDF	0.00000225 J,DX	Result U	Outfall018_20230121_Comp, Outfall009_20230131_Comp, Outfall002_20230131_Comp

TABLE 6
DIOXIN-FURAN EMPC
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Method	SDG #	Lab ID	Analyte	Concentration (µg/L)	Qualifier	Affected Samples
E1613B	5701223772	570-122377-1	1,2,3,4,7,8-HxCDD	0.000003 J,DXq	UJ	ArroyoSimi_20230101_Grab
E1613B	5701223772	570-122377-1	1,2,3,6,7,8-HxCDF	0.0000018 J,DXq	UJ	ArroyoSimi_20230101_Grab
E1613B	5701223772	570-122377-1	1,2,3,6,7,8-HxCDD	0.000002 J,DXq	UJ	ArroyoSimi_20230101_Grab
E1613B	5701223772	570-122377-1	2,3,4,6,7,8-HxCDF	0.0000021 J,DXq	UJ	ArroyoSimi_20230101_Grab
E1613B	5701223812	570-122381-1	1,2,3,4,7,8-HxCDD	0.0000019 J,DXq	UJ	Outfall009_20230102_Comp
E1613B	5701223812	570-122381-1	1,2,3,6,7,8-HxCDF	0.0000007 J,DXq	UJ	Outfall009_20230102_Comp
E1613B	5701223812	570-122381-1	2,3,4,6,7,8-HxCDF	0.00000037 J,DXq	UJ	Outfall009_20230102_Comp
E1613B	5701223902	570-122390-2	1,2,3,6,7,8-HxCDF	0.0000011 J,DXq	UJ	Outfall002_20230102_Comp
E1613B	5701223902	570-122390-2	1,2,3,6,7,8-HxCDD	0.0000014 J,DXq	UJ	Outfall002_20230102_Comp
E1613B	5701223902	570-122390-2	2,3,4,6,7,8-HxCDF	0.0000012 J,DXq	UJ	Outfall002_20230102_Comp
E1613B	5701229452	570-122945-1	2,3,7,8-TCDD	0.00000039 J,DXq	UJ	Outfall008_20230106_Comp
E1613B	5701233912	570-123391-2	1,2,3,7,8-PeCDF	0.00000024 J,DXq	UJ	Outfall011_20230110_Comp
E1613B	5701236532	570-123653-1	2,3,7,8-TCDD	0.00000044 J,DXq	UJ	Outfall010_20230111_Comp
E1613B	5701243922	570-124392-1	1,2,3,7,8-PeCDD	0.0000013 J,DXq	UJ	Outfall011_20230117_Comp
E1613B	5701248682	570-124868-1	1,2,3,7,8-PeCDD	0.00000045 J,DXq	UJ	Outfall001_20230120_Comp
E1613B	5701248682	570-124868-1	2,3,4,7,8-PeCDF	0.00000042 J,DXq	UJ	Outfall001_20230120_Comp
E1613B	5701248912	570-124891-1	2,3,4,7,8-PeCDF	0.00000047 J,DXq	UJ	Outfall009_20230121_Comp
E1613B	5701248982	570-124898-1	2,3,7,8-TCDD	0.00000044 J,DXq	UJ	Outfall018_20230121_Comp

TABLE 7
COMPOUND IDENTIFICATION
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG #	Sample ID	Analysis Date/Time	Method	Analyte	Qualification
5701229452	Outfall008_20230106_Comp	1/6/23 9:05 AM	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	The laboratory reanalyzed the sample due to Calibration Curve Exceedance. The original results are marked nonreportable and the reanalysis results are accepted.
5701229592	Outfall002_20230106_Comp	1/6/23 10:50 AM	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	
5701230162	Outfall001_20230106_Comp	1/6/23 7:20 AM	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	
5701230382	Outfall018_20230106_Comp	1/6/23 10:15 AM	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	
5701236532	Outfall010_20230111_Comp	1/11/23 9:45 AM	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	
5701236652	Outfall018_20230111_Comp	1/11/23 8:45 AM	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	
5701236702	Outfall008_20230111_Comp	1/11/23 10:35 AM	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	

TABLE 8
SYSTEM PERFORMANCE SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701223772	Arroyo Simi	ArroyoSimi_20230101_Grab	1/1/2023	570-122377-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.7E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701223772	Arroyo Simi	ArroyoSimi_20230101_Grab	1/1/2023	570-122377-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	4.1E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701223772	Arroyo Simi	ArroyoSimi_20230101_Grab	1/1/2023	570-122377-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	3.9E-05	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701223772	Arroyo Simi	ArroyoSimi_20230101_Grab	1/1/2023	570-122377-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.0E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701223772	Arroyo Simi	ArroyoSimi_20230101_Grab	1/1/2023	570-122377-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.7E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701223772	Arroyo Simi	ArroyoSimi_20230101_Grab	1/1/2023	570-122377-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.4E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701223772	Arroyo Simi	ArroyoSimi_20230101_Grab	1/1/2023	570-122377-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.8E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701223772	Arroyo Simi	ArroyoSimi_20230101_Grab	1/1/2023	570-122377-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.0E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701223772	Arroyo Simi	ArroyoSimi_20230101_Grab	1/1/2023	570-122377-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.1E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701223772	Arroyo Simi	ArroyoSimi_20230101_Grab	1/1/2023	570-122377-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.9E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701223772	Arroyo Simi	ArroyoSimi_20230101_Grab	1/1/2023	570-122377-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	2.1E-06	J,DX	J	DNQ	µg/L	
5701223772	Arroyo Simi	ArroyoSimi_20230101_Grab	1/1/2023	570-122377-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	3.7E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701223773	Arroyo Simi	ArroyoSimi_20230101_Grab	1/1/2023	476426-001	SM9223B	*Escherichia coli*	31000	H	J	H	mpn/100mL	
5701223792	OUTFALL 009	Outfall009_20230101_Grab	1/1/2023	476421-001	SM9223B	*Escherichia coli*	250	H	J	H	mpn/100mL	
5701223812	OUTFALL 009	Outfall009_20230102_Comp	1/2/2023	570-122381-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701223812	OUTFALL 009	Outfall009_20230102_Comp	1/2/2023	570-122381-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	3.7E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701223812	OUTFALL 009	Outfall009_20230102_Comp	1/2/2023	570-122381-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.0E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701223812	OUTFALL 009	Outfall009_20230102_Comp	1/2/2023	570-122381-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.9E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701223812	OUTFALL 009	Outfall009_20230102_Comp	1/2/2023	570-122381-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	4.5E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701223812	OUTFALL 009	Outfall009_20230102_Comp	1/2/2023	570-122381-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.4E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701223812	OUTFALL 009	Outfall009_20230102_Comp	1/2/2023	570-122381-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	7.0E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701223812	OUTFALL 009	Outfall009_20230102_Comp	1/2/2023	570-122381-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.0E-06	J,DX	J	DNQ	µg/L	
5701223812	OUTFALL 009	Outfall009_20230102_Comp	1/2/2023	570-122381-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.7E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701223812	OUTFALL 009	Outfall009_20230102_Comp	1/2/2023	570-122381-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	7.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701223812	OUTFALL 009	Outfall009_20230102_Comp	1/2/2023	570-122381-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.1E-06	J,DX	J	DNQ	µg/L	
5701223812	OUTFALL 009	Outfall009_20230102_Comp	1/2/2023	570-122381-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	4.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701223862	OUTFALL 002	Outfall002_20230101_Grab	1/1/2023	476424-001	SM9223B	*Escherichia coli*	490	H	J	H	mpn/100mL	
5701223902	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.4E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701223902	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.4E-05	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701223902	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.6E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701223902	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.2E-06	J,DX	J	DNQ	µg/L	
5701223902	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	2.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701223902	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.1E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701223902	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.4E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701223902	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.2E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701223902	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.4E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701223902	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.6E-06	J,DX	J	DNQ	µg/L	
5701223902	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	3.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701225031	OUTFALL 002	Outfall002_20230104_Grab	1/4/2023	476538-001	SM9223B	*Escherichia coli*	240	H	J	H	mpn/100mL	
5701229452	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E1613B	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	3.9E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701229452	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	4.6E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701229452	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	7.9E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229452	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	7.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229452	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	4.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229452	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.0E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701229452	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2.8E-07	J,DXMBq	R	D	µg/L	
5701229452	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	3.7E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229452	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.7E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701229452	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229452	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.1E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701229452	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.2E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229452	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	3.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229452	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	7.6E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701229452	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229592	OUTFALL 002	Outfall002_20230106_Comp	1/6/2023	570-122959-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.6E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701229592	OUTFALL 002	Outfall002_20230106_Comp	1/6/2023	570-122959-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.5E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229592	OUTFALL 002	Outfall002_20230106_Comp	1/6/2023	570-122959-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229592	OUTFALL 002	Outfall002_20230106_Comp	1/6/2023	570-122959-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	5.1E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229592	OUTFALL 002	Outfall002_20230106_Comp	1/6/2023	570-122959-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	3.7E-07	J,DXMBq	R	D	µg/L	
5701229592	OUTFALL 002	Outfall002_20230106_Comp	1/6/2023	570-122959-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.3E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701229592	OUTFALL 002	Outfall002_20230106_Comp	1/6/2023	570-122959-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	4.0E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration

TABLE 8
SYSTEM PERFORMANCE SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701229592	OUTFALL 002	Outfall002_20230106_Comp	1/6/2023	570-122959-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229592	OUTFALL 002	Outfall002_20230106_Comp	1/6/2023	570-122959-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	6.0E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701229592	OUTFALL 002	Outfall002_20230106_Comp	1/6/2023	570-122959-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229592	OUTFALL 002	Outfall002_20230106_Comp	1/6/2023	570-122959-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.1E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701229592	OUTFALL 002	Outfall002_20230106_Comp	1/6/2023	570-122959-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.2E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229592	OUTFALL 002	Outfall002_20230106_Comp	1/6/2023	570-122959-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	7.7E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701229592	OUTFALL 002	Outfall002_20230106_Comp	1/6/2023	570-122959-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701230162	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	8.8E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701230162	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.2E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701230162	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.4E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701230162	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701230162	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	3.9E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701230162	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	3.4E-07	J,DXMB	R	D	µg/L	
5701230162	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	8.3E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701230162	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.9E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701230162	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701230162	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	6.6E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701230162	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	8.7E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701230162	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.3E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701230162	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	7.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701230162	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	7.1E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701230162	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701230382	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	8.2E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701230382	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.5E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701230382	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	4.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701230382	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701230382	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701230382	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1.1E-06	J,DXMBq	R	D	µg/L	
5701230382	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	5.1E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701230382	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	5.0E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701230382	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701230382	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	7.4E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701230382	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.2E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701230382	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.0E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701230382	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701232371	Arroyo Simi	ArroyoSimi_20230109	1/9/2023	476865-001	SM9223B	*Escherichia coli*	4400	H	J	H	mpn/100mL	
5701232562	OUTFALL 011	Outfall011_20230108_Grab	1/8/2023	476867-001	SM9223B	*Escherichia coli*	110	H	J	H	mpn/100mL	
5701233912	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701233912	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2.1E-04	MB	U	B	µg/L	Report ND at sample concentration
5701233912	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.1E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701233912	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.0E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701233912	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.7E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701233912	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	8.4E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701233912	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	2.4E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701233912	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.3E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701233912	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.5E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701233912	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.3E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701233912	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.6E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701233912	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	8.9E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701233912	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	3.9E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701233932	OUTFALL 009	Outfall009_20230110_Comp	1/10/2023	570-123393-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	4.3E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701233932	OUTFALL 009	Outfall009_20230110_Comp	1/10/2023	570-123393-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.2E-04	MB	U	B	µg/L	Report ND at sample concentration
5701233932	OUTFALL 009	Outfall009_20230110_Comp	1/10/2023	570-123393-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	7.4E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701233932	OUTFALL 009	Outfall009_20230110_Comp	1/10/2023	570-123393-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	6.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701233932	OUTFALL 009	Outfall009_20230110_Comp	1/10/2023	570-123393-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.5E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701233932	OUTFALL 009	Outfall009_20230110_Comp	1/10/2023	570-123393-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.0E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701233932	OUTFALL 009	Outfall009_20230110_Comp	1/10/2023	570-123393-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	3.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701234142	OUTFALL 002	Outfall002_20230110_Comp	1/10/2023	570-123414-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	5.4E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701234142	OUTFALL 002	Outfall002_20230110_Comp	1/10/2023	570-123414-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	4.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701234142	OUTFALL 002	Outfall002_20230110_Comp	1/10/2023	570-123414-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	4.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701234142	OUTFALL 002	Outfall002_20230110_Comp	1/10/2023	570-123414-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.5E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration

TABLE 8
SYSTEM PERFORMANCE SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701234142	OUTFALL 002	Outfall002_20230110_Comp	1/10/2023	570-123414-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.3E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701234142	OUTFALL 002	Outfall002_20230110_Comp	1/10/2023	570-123414-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.2E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701234142	OUTFALL 002	Outfall002_20230110_Comp	1/10/2023	570-123414-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	3.9E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701234172	OUTFALL 010	Outfall010_20230110_Grab	1/10/2023	477186-001	SM9223B	*Escherichia coli*	77	H	J	H	mpn/100mL	
5701236502	OUTFALL 001	Outfall001_20230111_Comp	1/11/2023	570-123650-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	9.7E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701236502	OUTFALL 001	Outfall001_20230111_Comp	1/11/2023	570-123650-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2.4E-04	MB	U	B	µg/L	Report ND at sample concentration
5701236502	OUTFALL 001	Outfall001_20230111_Comp	1/11/2023	570-123650-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.5E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236502	OUTFALL 001	Outfall001_20230111_Comp	1/11/2023	570-123650-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.4E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236502	OUTFALL 001	Outfall001_20230111_Comp	1/11/2023	570-123650-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.0E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701236502	OUTFALL 001	Outfall001_20230111_Comp	1/11/2023	570-123650-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	6.1E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236502	OUTFALL 001	Outfall001_20230111_Comp	1/11/2023	570-123650-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.1E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701236502	OUTFALL 001	Outfall001_20230111_Comp	1/11/2023	570-123650-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.3E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236502	OUTFALL 001	Outfall001_20230111_Comp	1/11/2023	570-123650-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	5.4E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701236502	OUTFALL 001	Outfall001_20230111_Comp	1/11/2023	570-123650-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	7.1E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236532	OUTFALL 010	Outfall010_20230111_Comp	1/11/2023	570-123653-1	E1613B	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	4.4E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701236532	OUTFALL 010	Outfall010_20230111_Comp	1/11/2023	570-123653-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	8.6E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236532	OUTFALL 010	Outfall010_20230111_Comp	1/11/2023	570-123653-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.3E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701236532	OUTFALL 010	Outfall010_20230111_Comp	1/11/2023	570-123653-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	6.6E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701236532	OUTFALL 010	Outfall010_20230111_Comp	1/11/2023	570-123653-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2.8E-07	J,DXMB	R	D	µg/L	
5701236532	OUTFALL 010	Outfall010_20230111_Comp	1/11/2023	570-123653-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	7.5E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701236532	OUTFALL 010	Outfall010_20230111_Comp	1/11/2023	570-123653-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	6.9E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236532	OUTFALL 010	Outfall010_20230111_Comp	1/11/2023	570-123653-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	6.0E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236532	OUTFALL 010	Outfall010_20230111_Comp	1/11/2023	570-123653-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.6E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701236532	OUTFALL 010	Outfall010_20230111_Comp	1/11/2023	570-123653-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.4E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701236532	OUTFALL 010	Outfall010_20230111_Comp	1/11/2023	570-123653-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	6.0E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236532	OUTFALL 010	Outfall010_20230111_Comp	1/11/2023	570-123653-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	8.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236532	OUTFALL 010	Outfall010_20230111_Comp	1/11/2023	570-123653-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	8.0E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236532	OUTFALL 010	Outfall010_20230111_Comp	1/11/2023	570-123653-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	8.6E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236652	OUTFALL 018	Outfall018_20230111_Comp	1/11/2023	570-123665-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.4E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236652	OUTFALL 018	Outfall018_20230111_Comp	1/11/2023	570-123665-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236652	OUTFALL 018	Outfall018_20230111_Comp	1/11/2023	570-123665-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236652	OUTFALL 018	Outfall018_20230111_Comp	1/11/2023	570-123665-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236652	OUTFALL 018	Outfall018_20230111_Comp	1/11/2023	570-123665-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	3.6E-07	J,DXMB	R	D	µg/L	
5701236652	OUTFALL 018	Outfall018_20230111_Comp	1/11/2023	570-123665-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	3.4E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701236652	OUTFALL 018	Outfall018_20230111_Comp	1/11/2023	570-123665-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	4.3E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236652	OUTFALL 018	Outfall018_20230111_Comp	1/11/2023	570-123665-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.8E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236652	OUTFALL 018	Outfall018_20230111_Comp	1/11/2023	570-123665-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.3E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236652	OUTFALL 018	Outfall018_20230111_Comp	1/11/2023	570-123665-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.1E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701236652	OUTFALL 018	Outfall018_20230111_Comp	1/11/2023	570-123665-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	8.5E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236652	OUTFALL 018	Outfall018_20230111_Comp	1/11/2023	570-123665-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	5.8E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236652	OUTFALL 018	Outfall018_20230111_Comp	1/11/2023	570-123665-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	5.6E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236702	OUTFALL 008	Outfall008_20230111_Comp	1/11/2023	570-123670-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	7.1E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236702	OUTFALL 008	Outfall008_20230111_Comp	1/11/2023	570-123670-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	4.6E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236702	OUTFALL 008	Outfall008_20230111_Comp	1/11/2023	570-123670-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	4.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236702	OUTFALL 008	Outfall008_20230111_Comp	1/11/2023	570-123670-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	3.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236702	OUTFALL 008	Outfall008_20230111_Comp	1/11/2023	570-123670-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236702	OUTFALL 008	Outfall008_20230111_Comp	1/11/2023	570-123670-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	4.1E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701236702	OUTFALL 008	Outfall008_20230111_Comp	1/11/2023	570-123670-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2.7E-07	J,DXqMB	R	D	µg/L	
5701236702	OUTFALL 008	Outfall008_20230111_Comp	1/11/2023	570-123670-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	5.7E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236702	OUTFALL 008	Outfall008_20230111_Comp	1/11/2023	570-123670-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	5.8E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236702	OUTFALL 008	Outfall008_20230111_Comp	1/11/2023	570-123670-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	3.2E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701236702	OUTFALL 008	Outfall008_20230111_Comp	1/11/2023	570-123670-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.9E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701236702	OUTFALL 008	Outfall008_20230111_Comp	1/11/2023	570-123670-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	8.1E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236702	OUTFALL 008	Outfall008_20230111_Comp	1/11/2023	570-123670-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.7E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701236702	OUTFALL 008	Outfall008_20230111_Comp	1/11/2023	570-123670-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236702	OUTFALL 008	Outfall008_20230111_Comp	1/11/2023	570-123670-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	8.0E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701236702	OUTFALL 008	Outfall008_20230111_Comp	1/11/2023	570-123670-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	6.1E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701240791	Arroyo Simi	ArroyoSimi_20230113	1/13/2023	477410-001	SM9223B	*Escherichia coli*	12000	H	J	H	mpn/100mL	
5701242302	OUTFALL 018	Outfall018_20230115_Comp	1/15/2023	570-124230-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.3E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701242302	OUTFALL 018	Outfall018_20230115_Comp	1/15/2023	570-124230-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	9.5E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242302	OUTFALL 018	Outfall018_20230115_Comp	1/15/2023	570-124230-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.1E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration

TABLE 8
SYSTEM PERFORMANCE SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701242302	OUTFALL 018	Outfall018_20230115_Comp	1/15/2023	570-124230-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	6.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242302	OUTFALL 018	Outfall018_20230115_Comp	1/15/2023	570-124230-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242302	OUTFALL 018	Outfall018_20230115_Comp	1/15/2023	570-124230-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	8.6E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242302	OUTFALL 018	Outfall018_20230115_Comp	1/15/2023	570-124230-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	5.1E-07	J,DXMB	R	D	µg/L	
5701242302	OUTFALL 018	Outfall018_20230115_Comp	1/15/2023	570-124230-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242302	OUTFALL 018	Outfall018_20230115_Comp	1/15/2023	570-124230-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	7.9E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242302	OUTFALL 018	Outfall018_20230115_Comp	1/15/2023	570-124230-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	9.0E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242302	OUTFALL 018	Outfall018_20230115_Comp	1/15/2023	570-124230-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	9.8E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242302	OUTFALL 018	Outfall018_20230115_Comp	1/15/2023	570-124230-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242302	OUTFALL 018	Outfall018_20230115_Comp	1/15/2023	570-124230-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	8.8E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701242302	OUTFALL 018	Outfall018_20230115_Comp	1/15/2023	570-124230-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	3.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242302	OUTFALL 018	Outfall018_20230115_Comp	1/15/2023	570-124230-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242302	OUTFALL 018	Outfall018_20230115_Comp	1/15/2023	570-124230-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242332	OUTFALL 008	Outfall008_20230115_Comp	1/15/2023	570-124233-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242332	OUTFALL 008	Outfall008_20230115_Comp	1/15/2023	570-124233-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3.2E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242332	OUTFALL 008	Outfall008_20230115_Comp	1/15/2023	570-124233-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	4.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242332	OUTFALL 008	Outfall008_20230115_Comp	1/15/2023	570-124233-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242332	OUTFALL 008	Outfall008_20230115_Comp	1/15/2023	570-124233-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242332	OUTFALL 008	Outfall008_20230115_Comp	1/15/2023	570-124233-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	4.7E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701242332	OUTFALL 008	Outfall008_20230115_Comp	1/15/2023	570-124233-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	4.9E-07	J,DXMB	R	D	µg/L	
5701242332	OUTFALL 008	Outfall008_20230115_Comp	1/15/2023	570-124233-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	6.2E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242332	OUTFALL 008	Outfall008_20230115_Comp	1/15/2023	570-124233-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	5.6E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242332	OUTFALL 008	Outfall008_20230115_Comp	1/15/2023	570-124233-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	4.3E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701242332	OUTFALL 008	Outfall008_20230115_Comp	1/15/2023	570-124233-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.9E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242332	OUTFALL 008	Outfall008_20230115_Comp	1/15/2023	570-124233-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	7.8E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242332	OUTFALL 008	Outfall008_20230115_Comp	1/15/2023	570-124233-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.2E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701242332	OUTFALL 008	Outfall008_20230115_Comp	1/15/2023	570-124233-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242332	OUTFALL 008	Outfall008_20230115_Comp	1/15/2023	570-124233-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	7.1E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701242332	OUTFALL 008	Outfall008_20230115_Comp	1/15/2023	570-124233-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	7.7E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242392	OUTFALL 009	Outfall009_20230115_Comp	1/15/2023	570-124239-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.7E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242392	OUTFALL 009	Outfall009_20230115_Comp	1/15/2023	570-124239-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	9.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242392	OUTFALL 009	Outfall009_20230115_Comp	1/15/2023	570-124239-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242392	OUTFALL 009	Outfall009_20230115_Comp	1/15/2023	570-124239-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	2.8E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701242392	OUTFALL 009	Outfall009_20230115_Comp	1/15/2023	570-124239-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	4.5E-07	J,DXMB	R	D	µg/L	
5701242392	OUTFALL 009	Outfall009_20230115_Comp	1/15/2023	570-124239-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.1E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701242392	OUTFALL 009	Outfall009_20230115_Comp	1/15/2023	570-124239-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	3.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242432	OUTFALL 001	Outfall001_20230115_Comp	1/15/2023	570-124243-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.2E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701242432	OUTFALL 001	Outfall001_20230115_Comp	1/15/2023	570-124243-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	4.0E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242432	OUTFALL 001	Outfall001_20230115_Comp	1/15/2023	570-124243-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.9E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242432	OUTFALL 001	Outfall001_20230115_Comp	1/15/2023	570-124243-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242432	OUTFALL 001	Outfall001_20230115_Comp	1/15/2023	570-124243-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	5.3E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701242432	OUTFALL 001	Outfall001_20230115_Comp	1/15/2023	570-124243-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	5.5E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701242432	OUTFALL 001	Outfall001_20230115_Comp	1/15/2023	570-124243-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.1E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701242432	OUTFALL 001	Outfall001_20230115_Comp	1/15/2023	570-124243-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	4.0E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701242432	OUTFALL 001	Outfall001_20230115_Comp	1/15/2023	570-124243-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	6.1E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701242432	OUTFALL 001	Outfall001_20230115_Comp	1/15/2023	570-124243-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242432	OUTFALL 001	Outfall001_20230115_Comp	1/15/2023	570-124243-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	6.5E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242432	OUTFALL 001	Outfall001_20230115_Comp	1/15/2023	570-124243-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	9.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242432	OUTFALL 001	Outfall001_20230115_Comp	1/15/2023	570-124243-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	7.6E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242432	OUTFALL 001	Outfall001_20230115_Comp	1/15/2023	570-124243-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	4.2E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701242472	OUTFALL 002	Outfall002_20230115_Comp	1/15/2023	570-124247-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	8.8E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242472	OUTFALL 002	Outfall002_20230115_Comp	1/15/2023	570-124247-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.2E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242472	OUTFALL 002	Outfall002_20230115_Comp	1/15/2023	570-124247-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.7E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242472	OUTFALL 002	Outfall002_20230115_Comp	1/15/2023	570-124247-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242472	OUTFALL 002	Outfall002_20230115_Comp	1/15/2023	570-124247-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2.1E-07	J,DXMBq	R	D	µg/L	
5701242472	OUTFALL 002	Outfall002_20230115_Comp	1/15/2023	570-124247-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	4.5E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242472	OUTFALL 002	Outfall002_20230115_Comp	1/15/2023	570-124247-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.9E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701242472	OUTFALL 002	Outfall002_20230115_Comp	1/15/2023	570-124247-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	3.6E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242472	OUTFALL 002	Outfall002_20230115_Comp	1/15/2023	570-124247-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.9E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242472	OUTFALL 002	Outfall002_20230115_Comp	1/15/2023	570-124247-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242472	OUTFALL 002	Outfall002_20230115_Comp	1/15/2023	570-124247-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.9E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration

TABLE 8
SYSTEM PERFORMANCE SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701242472	OUTFALL 002	Outfall002_20230115_Comp	1/15/2023	570-124247-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	5.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242472	OUTFALL 002	Outfall002_20230115_Comp	1/15/2023	570-124247-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	3.4E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701242472	OUTFALL 002	Outfall002_20230115_Comp	1/15/2023	570-124247-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	4.1E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701243881	Arroyo Simi	ArroyoSimi_20230117	1/17/2023	477666-001	SM9223B	*Escherichia coli*	1200	H	J	H	mpn/100mL	
5701243922	OUTFALL 011	Outfall011_20230117_Comp	1/17/2023	570-124392-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701243922	OUTFALL 011	Outfall011_20230117_Comp	1/17/2023	570-124392-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.4E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701243922	OUTFALL 011	Outfall011_20230117_Comp	1/17/2023	570-124392-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.9E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701243922	OUTFALL 011	Outfall011_20230117_Comp	1/17/2023	570-124392-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701243922	OUTFALL 011	Outfall011_20230117_Comp	1/17/2023	570-124392-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.3E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701243922	OUTFALL 011	Outfall011_20230117_Comp	1/17/2023	570-124392-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	6.5E-07	J,DX	R	D	µg/L	
5701243922	OUTFALL 011	Outfall011_20230117_Comp	1/17/2023	570-124392-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	2.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701243922	OUTFALL 011	Outfall011_20230117_Comp	1/17/2023	570-124392-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1.2E-06	J,DX	J	DNQ	µg/L	
5701243922	OUTFALL 011	Outfall011_20230117_Comp	1/17/2023	570-124392-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.1E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701243922	OUTFALL 011	Outfall011_20230117_Comp	1/17/2023	570-124392-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.7E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701243922	OUTFALL 011	Outfall011_20230117_Comp	1/17/2023	570-124392-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.4E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701243922	OUTFALL 011	Outfall011_20230117_Comp	1/17/2023	570-124392-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.1E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701243922	OUTFALL 011	Outfall011_20230117_Comp	1/17/2023	570-124392-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.6E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701243922	OUTFALL 011	Outfall011_20230117_Comp	1/17/2023	570-124392-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1.5E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701248682	OUTFALL 001	Outfall001_20230120_Comp	1/20/2023	570-124868-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	5.8E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248682	OUTFALL 001	Outfall001_20230120_Comp	1/20/2023	570-124868-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	5.9E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248682	OUTFALL 001	Outfall001_20230120_Comp	1/20/2023	570-124868-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	6.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248682	OUTFALL 001	Outfall001_20230120_Comp	1/20/2023	570-124868-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	4.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248682	OUTFALL 001	Outfall001_20230120_Comp	1/20/2023	570-124868-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248682	OUTFALL 001	Outfall001_20230120_Comp	1/20/2023	570-124868-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	4.5E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701248682	OUTFALL 001	Outfall001_20230120_Comp	1/20/2023	570-124868-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2.7E-07	J,DXq	R	D	µg/L	
5701248682	OUTFALL 001	Outfall001_20230120_Comp	1/20/2023	570-124868-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	4.8E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248682	OUTFALL 001	Outfall001_20230120_Comp	1/20/2023	570-124868-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	4.2E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701248682	OUTFALL 001	Outfall001_20230120_Comp	1/20/2023	570-124868-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	4.2E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701248682	OUTFALL 001	Outfall001_20230120_Comp	1/20/2023	570-124868-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.6E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248682	OUTFALL 001	Outfall001_20230120_Comp	1/20/2023	570-124868-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	7.0E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248682	OUTFALL 001	Outfall001_20230120_Comp	1/20/2023	570-124868-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.4E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248682	OUTFALL 001	Outfall001_20230120_Comp	1/20/2023	570-124868-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	3.6E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701248682	OUTFALL 001	Outfall001_20230120_Comp	1/20/2023	570-124868-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	5.4E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701248682	OUTFALL 001	Outfall001_20230120_Comp	1/20/2023	570-124868-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	5.2E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701248732	OUTFALL 011	Outfall011_20230120_Comp	1/20/2023	570-124873-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	4.8E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248732	OUTFALL 011	Outfall011_20230120_Comp	1/20/2023	570-124873-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.9E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248732	OUTFALL 011	Outfall011_20230120_Comp	1/20/2023	570-124873-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.1E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248732	OUTFALL 011	Outfall011_20230120_Comp	1/20/2023	570-124873-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248732	OUTFALL 011	Outfall011_20230120_Comp	1/20/2023	570-124873-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	5.0E-07	J,DX	R	D	µg/L	
5701248732	OUTFALL 011	Outfall011_20230120_Comp	1/20/2023	570-124873-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	8.5E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248732	OUTFALL 011	Outfall011_20230120_Comp	1/20/2023	570-124873-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	4.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248732	OUTFALL 011	Outfall011_20230120_Comp	1/20/2023	570-124873-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	4.1E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701248732	OUTFALL 011	Outfall011_20230120_Comp	1/20/2023	570-124873-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	5.3E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248872	OUTFALL 002	Outfall002_20230121_Comp	1/21/2023	570-124887-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	3.1E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701248872	OUTFALL 002	Outfall002_20230121_Comp	1/21/2023	570-124887-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	7.7E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701248872	OUTFALL 002	Outfall002_20230121_Comp	1/21/2023	570-124887-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248872	OUTFALL 002	Outfall002_20230121_Comp	1/21/2023	570-124887-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248872	OUTFALL 002	Outfall002_20230121_Comp	1/21/2023	570-124887-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248872	OUTFALL 002	Outfall002_20230121_Comp	1/21/2023	570-124887-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	2.7E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701248872	OUTFALL 002	Outfall002_20230121_Comp	1/21/2023	570-124887-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.9E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701248872	OUTFALL 002	Outfall002_20230121_Comp	1/21/2023	570-124887-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.4E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701248872	OUTFALL 002	Outfall002_20230121_Comp	1/21/2023	570-124887-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	9.5E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701248872	OUTFALL 002	Outfall002_20230121_Comp	1/21/2023	570-124887-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	5.4E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248872	OUTFALL 002	Outfall002_20230121_Comp	1/21/2023	570-124887-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	3.6E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701248902	OUTFALL 008	Outfall008_20230121_Comp	1/21/2023	570-124890-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	3.6E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701248902	OUTFALL 008	Outfall008_20230121_Comp	1/21/2023	570-124890-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	5.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248902	OUTFALL 008	Outfall008_20230121_Comp	1/21/2023	570-124890-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248902	OUTFALL 008	Outfall008_20230121_Comp	1/21/2023	570-124890-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248902	OUTFALL 008	Outfall008_20230121_Comp	1/21/2023	570-124890-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248902	OUTFALL 008	Outfall008_20230121_Comp	1/21/2023	570-124890-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	4.7E-07	J,DX	R	D	µg/L	
5701248902	OUTFALL 008	Outfall008_20230121_Comp	1/21/2023	570-124890-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	4.1E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration

TABLE 8
SYSTEM PERFORMANCE SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701248902	OUTFALL 008	Outfall008_20230121_Comp	1/21/2023	570-124890-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	2.7E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701248902	OUTFALL 008	Outfall008_20230121_Comp	1/21/2023	570-124890-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.7E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248902	OUTFALL 008	Outfall008_20230121_Comp	1/21/2023	570-124890-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.6E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248902	OUTFALL 008	Outfall008_20230121_Comp	1/21/2023	570-124890-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.5E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248902	OUTFALL 008	Outfall008_20230121_Comp	1/21/2023	570-124890-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	7.3E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248902	OUTFALL 008	Outfall008_20230121_Comp	1/21/2023	570-124890-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	5.2E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701248902	OUTFALL 008	Outfall008_20230121_Comp	1/21/2023	570-124890-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	5.1E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701248912	OUTFALL 009	Outfall009_20230121_Comp	1/21/2023	570-124891-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.9E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248912	OUTFALL 009	Outfall009_20230121_Comp	1/21/2023	570-124891-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	7.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248912	OUTFALL 009	Outfall009_20230121_Comp	1/21/2023	570-124891-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248912	OUTFALL 009	Outfall009_20230121_Comp	1/21/2023	570-124891-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248912	OUTFALL 009	Outfall009_20230121_Comp	1/21/2023	570-124891-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248912	OUTFALL 009	Outfall009_20230121_Comp	1/21/2023	570-124891-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	8.4E-07	J,DX	R	D	µg/L	
5701248912	OUTFALL 009	Outfall009_20230121_Comp	1/21/2023	570-124891-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	3.0E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701248912	OUTFALL 009	Outfall009_20230121_Comp	1/21/2023	570-124891-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	4.7E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701248912	OUTFALL 009	Outfall009_20230121_Comp	1/21/2023	570-124891-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	3.5E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248912	OUTFALL 009	Outfall009_20230121_Comp	1/21/2023	570-124891-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.6E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701248912	OUTFALL 009	Outfall009_20230121_Comp	1/21/2023	570-124891-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.8E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701248912	OUTFALL 009	Outfall009_20230121_Comp	1/21/2023	570-124891-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.7E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248912	OUTFALL 009	Outfall009_20230121_Comp	1/21/2023	570-124891-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.5E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701248912	OUTFALL 009	Outfall009_20230121_Comp	1/21/2023	570-124891-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248912	OUTFALL 009	Outfall009_20230121_Comp	1/21/2023	570-124891-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	5.1E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248982	OUTFALL 018	Outfall018_20230121_Comp	1/21/2023	570-124898-1	E1613B	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	4.4E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701248982	OUTFALL 018	Outfall018_20230121_Comp	1/21/2023	570-124898-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248982	OUTFALL 018	Outfall018_20230121_Comp	1/21/2023	570-124898-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	7.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248982	OUTFALL 018	Outfall018_20230121_Comp	1/21/2023	570-124898-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248982	OUTFALL 018	Outfall018_20230121_Comp	1/21/2023	570-124898-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.6E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701248982	OUTFALL 018	Outfall018_20230121_Comp	1/21/2023	570-124898-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248982	OUTFALL 018	Outfall018_20230121_Comp	1/21/2023	570-124898-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	7.4E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248982	OUTFALL 018	Outfall018_20230121_Comp	1/21/2023	570-124898-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2.6E-07	J,DXMBq	R	D	µg/L	
5701248982	OUTFALL 018	Outfall018_20230121_Comp	1/21/2023	570-124898-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	8.2E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701248982	OUTFALL 018	Outfall018_20230121_Comp	1/21/2023	570-124898-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	6.4E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248982	OUTFALL 018	Outfall018_20230121_Comp	1/21/2023	570-124898-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	7.6E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248982	OUTFALL 018	Outfall018_20230121_Comp	1/21/2023	570-124898-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.6E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701248982	OUTFALL 018	Outfall018_20230121_Comp	1/21/2023	570-124898-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701248982	OUTFALL 018	Outfall018_20230121_Comp	1/21/2023	570-124898-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	7.4E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701248982	OUTFALL 018	Outfall018_20230121_Comp	1/21/2023	570-124898-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.5E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701248982	OUTFALL 018	Outfall018_20230121_Comp	1/21/2023	570-124898-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	7.0E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701248982	OUTFALL 018	Outfall018_20230121_Comp	1/21/2023	570-124898-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1.0E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701258392	OUTFALL 009	Outfall009_20230131_Comp	1/31/2023	570-125839-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.7E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701258392	OUTFALL 009	Outfall009_20230131_Comp	1/31/2023	570-125839-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	5.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701258392	OUTFALL 009	Outfall009_20230131_Comp	1/31/2023	570-125839-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701258392	OUTFALL 009	Outfall009_20230131_Comp	1/31/2023	570-125839-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.2E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701258392	OUTFALL 009	Outfall009_20230131_Comp	1/31/2023	570-125839-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.6E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701258392	OUTFALL 009	Outfall009_20230131_Comp	1/31/2023	570-125839-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	6.5E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701258392	OUTFALL 009	Outfall009_20230131_Comp	1/31/2023	570-125839-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.6E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701258392	OUTFALL 009	Outfall009_20230131_Comp	1/31/2023	570-125839-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	6.2E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701258392	OUTFALL 009	Outfall009_20230131_Comp	1/31/2023	570-125839-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.7E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701258392	OUTFALL 009	Outfall009_20230131_Comp	1/31/2023	570-125839-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.4E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701258392	OUTFALL 009	Outfall009_20230131_Comp	1/31/2023	570-125839-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	3.5E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701258392	OUTFALL 009	Outfall009_20230131_Comp	1/31/2023	570-125839-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	4.1E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701258402	OUTFALL 002	Outfall002_20230131_Comp	1/31/2023	570-125840-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	7.0E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701258402	OUTFALL 002	Outfall002_20230131_Comp	1/31/2023	570-125840-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	6.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701258402	OUTFALL 002	Outfall002_20230131_Comp	1/31/2023	570-125840-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701258402	OUTFALL 002	Outfall002_20230131_Comp	1/31/2023	570-125840-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.1E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701258402	OUTFALL 002	Outfall002_20230131_Comp	1/31/2023	570-125840-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701258402	OUTFALL 002	Outfall002_20230131_Comp	1/31/2023	570-125840-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	3.2E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701258402	OUTFALL 002	Outfall002_20230131_Comp	1/31/2023	570-125840-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1.9E-07	J,DXMBq	R	D	µg/L	
5701258402	OUTFALL 002	Outfall002_20230131_Comp	1/31/2023	570-125840-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	2.9E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701258402	OUTFALL 002	Outfall002_20230131_Comp	1/31/2023	570-125840-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.6E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701258402	OUTFALL 002	Outfall002_20230131_Comp	1/31/2023	570-125840-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	5.0E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration

TABLE 8
SYSTEM PERFORMANCE SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701258402	OUTFALL 002	Outfall002_20230131_Comp	1/31/2023	570-125840-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.0E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701258402	OUTFALL 002	Outfall002_20230131_Comp	1/31/2023	570-125840-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.4E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701258402	OUTFALL 002	Outfall002_20230131_Comp	1/31/2023	570-125840-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.9E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701258402	OUTFALL 002	Outfall002_20230131_Comp	1/31/2023	570-125840-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.1E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701258402	OUTFALL 002	Outfall002_20230131_Comp	1/31/2023	570-125840-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	4.8E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701258402	OUTFALL 002	Outfall002_20230131_Comp	1/31/2023	570-125840-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	7.6E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701243924	OUTFALL 011	Outfall011_20230117_Comp	1/17/2023	570-124392-1	EPA-821-R-02-014	Chronic Toxicity	Pass, -40.98		J	H	% SURVIVAL	

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Data Usability Summary Report

Project Name: The Boeing Company, Santa Susana Field Laboratory

Project Description: First Quarter 2023, Water Samples

Sample Date(s): January through March 2023

Analytical Laboratory: Eurofins Calscience Environmental Laboratories, Inc. – Tustin, CA

Eurofins TestAmerica – Tacoma, WA

Weck Laboratories, Inc. – City of Industry, CA

Validation Performed by: Eric Hitchens, Kristina Ilina

Validation Reviewed by: Vanessa Godard

Validation Date: 10 April 2023

Haley & Aldrich, Inc. prepared this Data Usability Summary Report (DUSR) to summarize the review and validation of the analytical results for Sample Delivery Group(s) (SDG) listed. This DUSR is organized into the following sections:

1. **Level II, First Quarter 2023**
2. **Level IV, First Quarter 2023**
3. **Explanations**
4. **Glossary**
5. **Abbreviations**
6. **Qualifiers**

References

This data validation and usability assessment was performed per the guidance and requirements established by the United States Environmental Protection Agency (USEPA) using the following reference materials:

- National Functional Guidelines (NFG) for Organic Data Review.
- National Functional Guidelines (NFG) for Inorganic Data Review.
- The project-specific Quality Assurance Project Plan (QAPP), herein referred to as the specified limits (see references section).

Data reported in this sampling event were reported to the laboratory method detection limit (MDL). Results found between the MDL and reporting limit (RL) are flagged J as estimated.

Sample data were qualified in accordance with the laboratory's standard operating procedures (SOP). The results presented in each laboratory report were found to be compliant with the data quality objectives (DQO) for the project and therefore usable; any exceptions are noted in the following pages.

1. Level II, First Quarter 2023

1.1 SAMPLE MANAGEMENT

This DUSR summarizes the review of SDG numbers listed in Table 1.

Samples were collected, preserved, and shipped following standard chain of custody (COC) protocol. Samples were also received appropriately, identified correctly, and analyzed according to the COC. Issues noted with sample management are listed below:

- The laboratory corrected multiple reports to revise metals analysis from 200.7 to include the full list of analytes with Method 200.8. No qualifiers applied.
- SDG 570-123418-1: Sample 1 received 1 of 2 containers broken. BLDG56_20230110_GRAB (570-123418-1). No qualifiers applied.
- SDG 570-12489-1 was revised due to: The Level 2 report was revised to correct the following: 245.1 dissolved mercury: missing QC for sample -2 in Filtration, prep, analytical batch 2298285, 298287, 298644. No qualifiers applied.

Analyses were performed on the samples listed in Table 2. Method holding times are listed in Table 3.

1.2 CASE NARRATIVE

The laboratory report case narrative lists various quality control exceedances (e.g., continuing calibration blank) not evaluated by this review thus, no qualifiers were applied to the reported results. However, the laboratory did note the following:

- Method 625.1SIM: The emulsions were broken up using sodium sulfate for the SDGs listed below. No qualifiers applied.
  - 570-123653-1;
  - 570-124243-1; and
  - 570-124247-1.
- Method SM 2540D: Samples in the following SDGs filtered very slowly, and the laboratory was unable to filter a large enough sample volume due to time constraints. No qualifiers applied.
  - 570-123665-1; and
  - 570-12489-1.
- SDG 570-124887-1: Calibration date on instrument raw date for Sample Outfall002_20230121_Comp (570-124887-1) mistakenly printed with date 1/6/2023. Verified with chemist and Raw Data no further correction needed. No qualifiers applied.

1.3 HOLDING TIMES/PRESERVATION

The samples arrived at the laboratory at the proper temperature and were prepared and analyzed within the holding time and preservation criteria specified per method protocol.

- Method 200.8 requires filtration within 15 minutes of field sampling. Data was not qualified in this set if samples were filtered outside of the 15-minute limit.
- Method 218.6: In several cases, samples to be analyzed for hexavalent chromium were filtered and buffered with ammonium sulfate solution per EPA Method 218.6 within 24 hours of collection. This extends the holding time to 28 days per the 2017 Clean Water Act Methods Update Rule, which supersedes preservation and holding time requirements in the analytical method.
- In cases of deviations between the laboratory holding times and the holding times established in the QAPP, data was qualified according to the QAPP holding times.
- Data was not qualified in cases where sample pH was outside acceptance limits, but it was corrected upon receipt at the laboratory.
- Any additional exceptions are noted in Table 4 and qualified.

1.4 REPORTING LIMITS AND SAMPLE DILUTIONS

The RLs for the samples within this SDG met or were below the minimum RL requirements specified by the project specific QAPP with the following exceptions:

- Dilution of the project samples were required to bring calibration of target analytes within calibration range, matrix interference, foaming at the time of purging, or abundance of non-target analytes.

1.5 SURROGATE RECOVERY COMPLIANCE

Refer to section E 1.2. The percent recovery (%R) for each surrogate compound added to each project sample were determined to be within the laboratory specified quality control (QC) limits. Any exceptions are noted in Table 5.

1.6 LABORATORY CONTROL SAMPLES

Refer to section E 1.3. Compounds associated with the laboratory control samples/laboratory control sample duplicates (LCS/LCSD) analyses associated with client samples exhibited recoveries and relative percent differences (RPDs) within the specified limits. Any exceptions are noted in Table 6.

1.7 MATRIX SPIKE SAMPLES

Refer to section E 1.4. The sample(s) listed in Table 7 were used for matrix spike/matrix spike duplicate (MS/MSD) analysis. The MS/MSD recoveries and the relative percent difference (RPD) between the MS and MSD results were within the specified limits, with the following exceptions:

- Data was not qualified in cases where the laboratory flagged recoveries outside of laboratory limits, but the recoveries were within QAPP limits, as noted in Table 7.

1.8 BLANK SAMPLE ANALYSIS

Refer to section E 1.5. Method blank samples had no detections, indicating that no contamination from laboratory activities occurred, with any exceptions noted in Table 8. The analysis of the blank samples for field quality control was free of target compounds.

1.9 DUPLICATE SAMPLE ANALYSIS

Refer to section E 1.6. The samples listed on Table 9 were used for laboratory duplicate analysis and the RPDs were all below 20 percent (or the absolute difference rule was satisfied if detects were less than 5 times the RL). No field duplicates were collected in this data set.

1.10 PRECISION AND ACCURACY

Refer to section E 1.7. Where required by the method, some measurement of analytical accuracy and precision was reported for each method with the site samples.

1.11 CONFIRMATION COLUMN REVIEW

Refer to section E 1.8. Data that the laboratory flagged as exceeding the relative percent differences (RPD) were qualified and are listed below.

Method	Analyte	Sample	RPD	Action
E608.3	delta-BHC	570-123016-1	> 40%	Qualify data estimated J/UJ.
E608.3	Heptachlor	570-123016-1	> 40%	Qualify data estimated J/UJ.

1.12 SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The results presented in this report were found to comply with the DQOs for the project and the guidelines specified by the analytical method. Based on the review of this report, the data are useable and acceptable as no data was rejected except for rejected data noted in Table 10. A summary of qualifiers applied to this data set is shown in Table 10.

2. Level IV, First Quarter 2023

2.1 SAMPLE MANAGEMENT

This DUSR summarizes the review of SDG numbers:

- 5701223811,
- 5701223901,
- 5701229451,
- 5701229591,
- 5701230161,
- 5701233911,
- 5701242431,
- 5701242471, and
- 5701243921.

Samples were collected, preserved, and shipped following standard chain of custody (COC) protocol. Samples were also received appropriately, identified correctly, and analyzed according to the COC.

Analyses were performed on the following samples:

Sample ID	Sample Type	Lab ID	Sample Date	Matrix	Methods
Outfall009_20230102_Comp	N	570-122381-1	1/2/2023	WM	C
Outfall002_20230102_Comp	N	570-122390-2	1/2/2023	WM	A, C
Outfall008_20230106_Comp	N	570-122945-1	1/6/2023	WM	C
Outfall002_20230106_Comp	N	570-122959-1	1/6/2023	WM	A
Outfall001_20230106_Comp	N	570-123016-1	1/6/2023	WM	A, C, D
Outfall011_20230110_Comp	N	570-123391-2	1/10/2023	WM	B
Outfall001_20230115_Comp	N	570-124243-1	1/15/2023	WM	A
Outfall002_20230115_Comp	N	570-124247-1	1/15/2023	WM	A
Outfall011_20230117_Comp	N	570-124392-1	1/17/2023	WM	A

Method Holding Times			
A.	E200.8	Iron	180 days for liquid, preserved
B.	E200.8	Manganese	180 days for liquid, preserved
C.	E625.1SIM	BASE/NEUTRAL AND ACID BY GC/MS BY SIM	7 days / 40 days
D.	E608.3	Organochlorine Pesticides and PCBs by GC/HSD	14 days extraction / 40 days analysis for liquid, unpreserved

2.2 CASE NARRATIVE

The laboratory report case narrative lists various quality control exceedances (e.g., continuing calibration blank) not evaluated by this review thus, no qualifiers were applied to the reported results. However, the laboratory did note the following:

- Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with samples 570-122390-2 and 570-123016-1.

2.3 HOLDING TIMES/PRESERVATION

The samples arrived at the laboratory at the proper temperature and were prepared and analyzed within the holding time and preservation criteria specified per method protocol.

2.4 REPORTING LIMITS AND SAMPLE DILUTIONS

The RLs for the samples within this SDG met or were below the minimum RL requirements specified by the project specific QAPP.

2.5 SURROGATE RECOVERY COMPLIANCE

Refer to section E 1.2. The percent recovery (%R) for each surrogate compound added to each project sample were determined to be within the laboratory specified quality control (QC) limits.

2.6 LABORATORY CONTROL SAMPLES

Refer to section E 1.3. Compounds associated with the laboratory control samples/laboratory control sample duplicates (LCS/LCSD) analyses associated with client samples exhibited recoveries and relative percent differences (RPDs) within the specified limits. Any exceptions are noted in Table 6.

2.7 MATRIX SPIKE SAMPLES

Refer to section E 1.4. The sample(s) below were used for matrix spike/matrix spike duplicate (MS/MSD):

Lab Sample Number	Matrix Spike Client ID	Method(s)
570-124392-1	Outfall011_20230117_Comp	E200.8

The MS/MSD recoveries and the RPD between the MS and MSD results were within the specified limits.

2.8 BLANK SAMPLE ANALYSIS

Refer to section E 1.5. Method blank samples had no detections, indicating that no contamination from laboratory activities occurred, with any exceptions noted in Table 8. The analysis of the blank samples for field quality control was free of target compounds.

2.9 DUPLICATE SAMPLE ANALYSIS

Refer to section E 1.6. No client samples were used for laboratory duplicate analysis.

2.10 PRECISION AND ACCURACY

Refer to section E 1.7. Where required by the method, some measurement of analytical accuracy and precision was reported for each method with the site samples.

2.11 CONFIRMATION COLUMN REVIEW

Refer to section E 1.8. Data that the laboratory flagged as exceeding the relative percent differences (RPD) were qualified and listed below.

Method	Analyte	Sample	RPD	Action
E608.3	delta-BHC	570-123016-1	143.87	Qualify data estimated J/UJ.
E608.3	Heptachlor	570-123016-1	170.91	Qualify data estimated J/UJ.

2.12 CALIBRATION BLANKS

Refer to section E 1.18. Calibration blanks had no detections.

2.13 INTERFERENCE CHECK SAMPLES AND INDUCTIVELY COUPLED PLASMA/MASS SPECTROMETRY TUNE

Refer to section E 1.19. Percent recoveries were within the specified limits.

The tune check was reviewed, and the resolution of the mass calibration was within 0.1 unified atomic mass unit (u) and the Percent Relative Standard Deviation (%RSD) less than 5 percent.

The CRI, when used, verifies the reporting limit for each analyte with control limits of 70 to 130 percent, or 50 to 150 percent for manganese. The CRI and/or the RL standard checks were within limits.

2.14 INITIAL AND CONTINUING CALIBRATION VERIFICATION

Refer to section E 1.21. Percent Recovery (%R) were reviewed and were found to be within limits.

2.15 INTERNAL STANDARDS

Refer to section E 1.22. Percent relative intensity were reviewed and found to be within the specified limits.

2.16 SAMPLE RESULT VERIFICATION

A portion of the sample result(s) were tracked through the relevant sample preparation steps, raw data outputs, transcriptions, conversions and/or calculations and have been confirmed to be accurate and representative of the sample conditions.

2.17 SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The results presented in this report were found to comply with the DQOs for the project and the guidelines specified by the analytical method. Based on the review of this report, the data are useable and acceptable as no data was rejected except for rejected data noted in Table 10. A summary of qualifiers applied to this data set is shown in Table 10.

3. Explanations

The following explanations include more detailed information regarding each of the sections in the DUSR above. Not all sections in the Explanations are represented:

- E 1.2 Surrogate Recovery Compliance
  - Surrogates, also known as system monitoring compounds, are compounds added to each sample prior to sample preparation to determining the efficiency of the extraction procedure by evaluating the percent recovery (%R) of the compounds.
- E 1.3 Laboratory Control Samples
  - The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) analyses are used to assess the precision and accuracy of the analytical method independent of matrix interferences.
- E 1.4 Matrix Spike Samples
  - Matrix spike/matrix spike duplicate (MS/MSD) data are used to assess the precision and accuracy of the analytical method and evaluate the effects of the sample matrix on the sample preparation procedures and measurement methodologies.
  - For inorganic methods, when a matrix spike recovery falls outside of the control limits and the sample result is less than four times the spike added, a post digestion spike (PDS) is performed.
- E 1.5 Blank Sample Analysis
  - Method blanks are prepared by the analytical laboratory and analyzed concurrently with the project samples to assess possible laboratory contamination.
  - Field blanks are prepared to identify contamination that may have been introduced during field activity. Equipment blanks are prepared to identify contamination that may have been introduced while decontaminating sampling equipment. Trip blanks are prepared when volatile analysis is requested to identify contamination that may have been introduced during transport.
- E 1.6 Laboratory and Field Duplicate Sample Analysis
  - The laboratory duplicate sample analysis is used by the laboratory at the time of the analysis to demonstrate acceptable method precision. The RPD or absolute difference was evaluated for each duplicate sample pair to monitor the reproducibility of the data.
  - The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. The relative percent difference (RPD) or absolute difference was evaluated for each duplicate sample pair to monitor the reproducibility of the data.

- E 1.7 Precision and Accuracy
  - Precision measures the reproducibility of repetitive measurements. In a laboratory environment, this will be measured by determining the relative percent difference (RPD) found between a primary and a duplicate sample. This can be an LCS/LCSD pair, a MS/MSD pair, a laboratory duplicate performed on a site sample, or a field duplicate collected and analyzed concurrently with a site sample.
  - Accuracy is a statistical measurement of the correctness of a measured value and includes components of random error (variability caused by imprecision) and systematic error. In a laboratory environment, this will be measured by determining the percent recovery (%R) of certain spiked compounds. This can be assessed using LCS, blank spike (BS), MS, and/or surrogate recoveries.
- E 1.8 Confirmation Column Review
  - When analyzing for pesticides and polychlorinated biphenyls (PCB), compound identification based on single-column analysis should be confirmed on a second column or supported by at least one other qualitative technique. When confirmed on a second column, the relative percent difference (RPD) should not exceed 40 percent.
- E 1.18 Calibration Blanks
  - Calibration blanks help determine the validity of the analytical results by determining the presence and magnitude of contamination resulting from laboratory activities or baseline drift during analysis. Initial Calibration Blanks (ICB) are analyzed after the standards and prior to the Initial Calibration Verification (ICV) sample. Continuing Calibration Blanks (CCB) are analyzed immediately after every Continuing Calibration Verification (CCV) sample.
- E 1.19 Interference Check Samples and Inductively Coupled Plasma/Mass Spectrometry Tune
  - Inorganic analysis requires an interference check sample be run to determine the validity of the analytical results based on the instrument's ability to overcome interferences typical of those found in samples. Percent recoveries of the interferents or analytes must be between 80 and 120percent.
  - Inorganic analysis performed by a mass spectrometer also requires an Inductively Coupled Plasma/Mass Spectrometry (ICP/MS) tune check that serves as an initial demonstration of instrument stability and precision.
  - The Contract Laboratory Program no longer requires the Contract Required Quantitation Limit Check Standard (CRI) for inorganic analysis, which is run after calibrations, though some laboratories still provide the CRI as well as the required RL standard check.

- E 1.21 Initial and Continuing Calibration Verification
  - Organic methods require an additional ICV and CCV to ensure that the instrument continues to meet the sensitivity and linearity criteria to produce acceptable qualitative and quantitative data throughout each analytical sequence. CCVs must be run at the beginning and end of every 12-hour period of operation.
  - Inorganic methods require an ICV and CCV to ensure that the instrument continues to meet the sensitivity and linearity criteria to produce acceptable qualitative and quantitative data throughout each analytical sequence. Initial calibrations must be run each time the instrument is set up and after each CCV failure. ICVs are analyzed immediately after initial calibration to verify ICAL accuracy, and CCVs are analyzed every two hours during an analytical sequence. %R is reported and must be within the specified limits (90 to 110 percent).
- E 1.22 Internal Standards
  - Internal standards are compounds added to each sample by the laboratory prior to metals sample analysis to ensure that instrument sensitivity and response are stable during each analysis.
  - Internal standards are compounds added to each sample by the laboratory prior to metals sample analysis to ensure that instrument sensitivity and response are stable during each analysis. The lab uses a single internal standard to make sure they are getting good intake of the sample into the instrument. Corrections are not made to any of the elements' responses based on this standard.

4. Glossary

Not all of the following symbols, acronyms, or qualifiers occur in this document.

- Sample Types:
  - EB Equipment Blank Sample
  - FB Field Blank Sample
  - FD Field Duplicate Sample
  - N Primary Sample
  - TB Trip Blank Sample
- Units:
  - % SURVIVAL percent survival
  - µg/L microgram per liter
  - mg/kg milligrams per kilogram
  - mg/L milligram per liter
  - mL/L milliliters per liter
  - mpn/100mL most probable number per 100 milliliters
  - NTU nephelometric turbidity unit
  - pCi/L picocuries per liter
  - umhos/cm micromhos per centimeter
- Matrices:
  - WM Stormwater
  - WMQ Water Quality control matrix
- Table Footnotes:
  - NA Not applicable
  - ND Non-detect
  - NR Not reported
- Common Symbols:
  - % percent
  - < less than
  - ≤ less than or equal to
  - > greater than
  - ≥ greater than or equal to
  - = equal
  - °C degrees Celsius
  - ± plus or minus
  - ~ approximately
  - x times (multiplier)
- Fractions:
  - D Dissolved (filtered)
  - N Normal (method cannot be filtered)
  - T Total (unfiltered)

5. Abbreviations

%D	Percent Difference
%R	Percent Recovery
%RSD	Percent Relative Standard Deviation
2s	2 sigma
4,4-DDT	4 4-dichlorodiphenyltrichloroethane
Abs Diff	Absolute Difference
amu	atomic mass unit
BPJ	Best Professional Judgement
BS	Blank Spike
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CCVL	Continuing Calibration Verification Low
COC	Chain of Custody
COM	Combined Isotope Calculation
Cr (VI)	Hexavalent Chromium
CRI	Collision Reaction Interface
DQO	data quality objective
DUSR	Data Usability Summary Report
EMPC	Estimated Maximum Possible Concentration
FBK	Field Blank Contamination
FDP	Field Duplicate
GC	Gas Chromatograph
GC/MS	Gas Chromatography/Mass Spectrometry
GPC	Gel Permeation Chromatography
HCl	Hydrochloric Acid
ICAL	Initial Calibration
ICB	Initial Calibration Blank
ICP/MS	Inductively Coupled Plasma/ Mass Spectrometry
ICV	Initial Calibration Verification
ICVL	Initial Calibration Verification Low
IPA	Isopropyl Alcohol
LC	Laboratory Control
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate
MDC	Minimum Detectable Concentration
MDL	Laboratory Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NFG	National Functional Guidelines
NH_3	Ammonia
PCB	Polychlorinated Biphenyl
PDS	Post Digestion Spike
PEM	Performance Evaluation Mixture
QAPP	Quality Assurance Project Plan
QC	Quality Control
QSM	Quality Systems Manual
R^2	R-squared value
Ra-226	Radium-226
Ra-228	Radium-228
RESC	Resolution Check Measure
RER	Relative Error Ratio
RL	Laboratory Reporting Limit
RPD	Relative Percent Difference
RRF	Relative Response Factors
RT	Retention Time
SAP	sampling analysis plan
SDG	Sample Delivery Group
SIM	Selected ion monitoring
SOP	Laboratory Standard Operating Procedures
SPE	Solid Phase Extraction
SVOC	Semi-Volatile Organic Compounds
TIC	Tentatively Identified Compound
TKN	Total Kjeldahl Nitrogen
TPH	Total Petroleum Hydrocarbon
TPU	Total Propagated Uncertainty
amu	atomic mass unit
USEPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compounds

6. Qualifiers

The qualifiers below are from the USEPA National Functional Guidelines and the data in the DUSR may contain these qualifiers:

- Laboratory Qualifiers:

BA	Relative percent difference out of control.
BU	Analyzed out of holding time.
BV	Sample received after holding time expired.
EY	Result exceeds normal dynamic range; reported as a minimum estimate.
F1	MS and/or MSD recovery exceeds control limits.
G	The Sample MDC is greater than the requested RL.
J,DX	Results found between the EDL or MDL and laboratory RL.
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS).
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS).
LQ	LCS/LCSD recovery above method control limits.
MB	Analyte present in the method blank.
PI	Primary and confirm results varied by > than 40% RPD.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio; the measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.
U	Result is less than the sample detection limit.

- Validation Notes:

--	Based on validation of the data, a qualifier was not required.
*1	Improper preservation of sample.
*III	Unusual problems found with the data that have been described in the validation report.
B	Laboratory method blank contamination.
D	The analysis with this flag should not be used because another more technically sound analysis is available.
DNQ	Detected but not quantified (constituent value greater than or equal to the laboratory method detection limit and less than the laboratory reporting limit).
E	Duplicates show poor agreement.
H	Holding times were exceeded.
L1	Laboratory control standard (LCS)/laboratory control standard duplicate (LCSD), relative percent difference (RPD) was outside the control limit.
Q	Matrix spike (MS) recovery outside of control limits.
RPD	Pesticides and PCB Confirmation Column RPD Exceeded.

- Validation Qualifiers:

=	No Qualifier.
J	The compound was positively identified; however, the associated numerical value is an estimated concentration only.
J-	The result is an estimated quantity, but the result may be biased low.
J+	The result is an estimated quantity, but the result may be biased high.
R	The sample results were rejected as unusable; the compound may or may not be present in the sample.
U	The compound was analyzed for but not detected. The associated value is either the compound quantitation limit if not detected by the analytical instrument or could be the reported or blank concentration if qualified by blank contamination. This can also be displayed as less than the associated compound quantitation limit (<RL or <MDL), or “ND”.
UJ	The compound was not detected above the reported sample quantitation limit; however, the reported limit is estimated and may or may not represent the actual limit of quantitation.

References

1. United States Environmental Protection Agency (USEPA), 2020a. National Functional Guidelines for Inorganic Superfund Methods Data Review. EPA-542-R-20-006. November 2020.
2. USEPA, 2020b. National Functional Guidelines for Organic Superfund Methods Data Review. EPA-540-R-20-005. November 2020.
3. Haley & Aldrich, Inc, 2015. Quality Assurance Project Field Plan for Santa Susana Field Laboratory Stormwater Sampling Program. December.

TABLE 1
SDGS SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#
570-122377-1
570-122379-1
570-122381-1
570-122386-1
570-122390-1
570-122522-1
570-122678-1
570-122682-1
570-122945-1
570-122949-1
570-122959-1
570-123016-1
570-123038-1
570-123256-1
570-123258-1
570-123261-1
570-123264-1
570-123265-1
570-123266-1
570-123267-1
570-123391-1
570-123393-1
570-123414-1
570-123417-1
570-123650-1
570-123653-1
570-123665-1
570-123670-1
570-124229-1
570-124230-1
570-124231-1
570-124233-1
570-124236-1
570-124239-1
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570-124244-1
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570-124247-1
570-124865-1
570-124868-1

SDG#
570-124869-1
570-124870-1
570-124871-1
570-124872-1
570-124392-1
570-122386-3
570-122522-3
570-122678-3
570-123256-3
570-123258-2
570-123417-3
570-124873-1
570-124874-1
570-124890-1
570-124891-1
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570-125741-1
570-125743-1
570-125839-1
570-125840-1
570-122377-4
570-122381-5
570-122390-4
570-122945-5
570-123016-3
570-123038-4
570-123653-5
570-124887-1
570-128840-1
570-128843-1
570-128844-1
570-128846-1
570-129006-1
570-129007-1
570-129008-1
570-129084-1
570-129851-1
570-129926-1
570-129990-1
570-129991-1

TABLE 2
SAMPLE ANALYSIS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Sample ID	Sample Type	Lab ID	Sample Date	Matrix	Method(s)[1]
ArroyoSimi_20230101_Grab	N	570-122377-1	01/01/2023	WM	A, B, C
ArroyoSimi_20230101_Grab	N	3A04002-01	01/01/2023	WM	D
Outfall009_20230101_Grab	N	570-122379-1	01/01/2023	WM	E, F
TB20230101	TB	570-122379-3	01/01/2023	WMQ	F
Outfall009_20230102_Comp	N	570-122381-1	01/02/2023	WM	A, B, C, G, H, I, J, K, L, M, N, O
Outfall009_20230102_Comp_F	N	570-122381-2	01/02/2023	WM	B, G, H, J
Outfall009_20230102_Comp	N	3A04001-01	01/02/2023	WM	D
Outfall002_20230101_Grab	N	570-122386-1	01/01/2023	WM	E, F, P, Q, R, S
TB20230101	TB	570-122386-3	01/01/2023	WMQ	F
Outfall002_20230101_Grab	N	3B02091-01	01/01/2023	WM	T
Outfall002_20230102_Comp_F	N	570-122390-1	01/02/2023	WM	B, G, H, J
Outfall002_20230102_Comp	N	570-122390-2	01/02/2023	WM	A, B, C, G, H, I, J, K, L, M, N, O, U, V, W, X, Y, Z
Outfall002_20230102_Comp	N	3A09128-01	01/02/2023	WM	AA
Outfall018_20230104_Grab	N	570-122522-1	01/04/2023	WM	E, F, P, Q, R, S
TB-20230104	TB	570-122522-3	01/04/2023	WMQ	F
Outfall018_20230104_Grab	N	3B02092-01	01/04/2023	WM	T
Outfall008_20230105_Grab	N	570-122678-1	01/05/2023	WM	E, F
TB-20230105	TB	570-122678-3	01/05/2023	WMQ	F
Outfall008_20230105_Grab	N	3B02094-01	01/05/2023	WM	T
Outfall001_20230105_Grab	N	570-122682-1	01/05/2023	WM	E, F, P, Q, R, S
TB-20230105	TB	570-122682-3	01/05/2023	WMQ	F
Outfall008_20230106_Comp	N	570-122945-1	01/06/2023	WM	A, B, C, G, H, I, J, K, L, M, N, O, U
Outfall008_20230106_Comp_F	N	570-122945-2	01/06/2023	WM	B, G, H, J
Outfall008_20230106_Comp	N	3A09030-01	01/06/2023	WM	D
Outfall002_20230105_Grab	N	570-122949-1	01/05/2023	WM	E, F, P, Q
TB-20230105	TB	570-122949-3	01/05/2023	WMQ	F
Outfall002_20230106_Comp	N	570-122959-1	01/06/2023	WM	A, C, H, J, K, L, M, N, O, U, V, W, Y
OUTFALL002_20230106_COMP_F	N	570-122959-3	01/06/2023	WM	H, J
Outfall001_20230106_Comp	N	570-123016-1	01/06/2023	WM	A, B, C, G, H, I, J, K, L, M, N, O, U, V, W, X, Y, Z
OUTFALL001_20230106_COMP_F	N	570-123016-3	01/06/2023	WM	B, G, H, J
Outfall001_20230106_Comp	N	3A06117-01	01/06/2023	WM	AA, D
Outfall018_20230106_Comp_F	N	570-123038-1	01/06/2023	WM	B, G, H, J
Outfall018_20230106_Comp	N	570-123038-2	01/06/2023	WM	A, B, C, G, H, I, J, K, L, M, N, O, U, V, W, X, Y, Z
Outfall018_20230106_Comp	N	3A06118-01	01/06/2023	WM	AA
Outfall011_20230108_Grab	N	570-123256-1	01/08/2023	WM	E, F, P, Q, R, S
TB-20230108	TB	570-123256-3	01/08/2023	WMQ	F
Outfall011_20230108_Grab	N	3B02096-01	01/08/2023	WM	T
Arroyo_Simi_20230109_Grab	N	570-123258-1	01/09/2023	WM	A, F, H, M, N
Arroyo_Simi_20230109_Grab	N	3B02098-01	01/09/2023	WM	T
Outfall018_20230109_Grab	N	570-123261-1	01/09/2023	WM	E, F, P, Q
TB-20230109	TB	570-123261-3	01/09/2023	WMQ	F
Outfall002_20230109_Grab	N	570-123264-1	01/09/2023	WM	E, F, P, Q
TB-20230109	TB	570-123264-3	01/09/2023	WMQ	F
Outfall001_20230109_Grab	N	570-123265-1	01/09/2023	WM	E, F, P, Q
TB-20230109	TB	570-123265-3	01/09/2023	WMQ	F
Outfall009_20230109_Grab	N	570-123266-1	01/09/2023	WM	E
Outfall008_20230109_Grab	N	570-123267-1	01/09/2023	WM	E
OUTFALL011_20230110_COMP_F	N	570-123391-1	01/10/2023	WM	B, G, H, J
Outfall011_20230110_Comp	N	570-123391-2	01/10/2023	WM	A, B, C, G, H, I, J, K, L, M, N, O, U, V, W, X, Y, Z
Outfall009_20230110_Comp	N	570-123393-1	01/10/2023	WM	C, H, J, K, N, O
Outfall009_20230110_Comp_F	N	570-123393-2	01/10/2023	WM	H, J
Outfall002_20230110_Comp	N	570-123414-1	01/10/2023	WM	A, C, H, J, K, L, M, N, O, U, V, W, Y
Outfall002_20230110_Comp_F	N	570-123414-3	01/10/2023	WM	H, J
Outfall010_20230110_Grab	N	570-123417-1	01/10/2023	WM	E, F
TB-20230110	TB	570-123417-3	01/10/2023	WMQ	F
Outfall010_20230110_Grab	N	3B02099-01	01/10/2023	WM	T
Outfall001_20230111_Comp	N	570-123650-1	01/11/2023	WM	A, C, H, J, K, L, M, N, O, U, V, W, Y
Outfall001_20230111_Comp_F	N	570-123650-3	01/11/2023	WM	H, J
Outfall010_20230111_Comp	N	570-123653-1	01/11/2023	WM	A, B, C, G, H, I, J, K, L, M, N, O
Outfall010_20230111_Comp_F	N	570-123653-2	01/11/2023	WM	B, G, H, J
Outfall010_20230111_Comp	N	3A11195-01	01/11/2023	WM	D
Outfall018_20230111_Comp	N	570-123665-1	01/11/2023	WM	A, C, H, J, K, L, M, N, O, U, V, W, Y

TABLE 2
SAMPLE ANALYSIS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Sample ID	Sample Type	Lab ID	Sample Date	Matrix	Method(s)[1]
Outfall018_20230111_Comp_F	N	570-123665-3	01/11/2023	WM	H, J
Outfall008_20230111_Comp	N	570-123670-1	01/11/2023	WM	C, H, J, K, L, N, O, U
OUTFALL008_20230111_COMP_F	N	570-123670-2	01/11/2023	WM	H, J
Outfall011_20230115_Grab	N	570-124229-1	01/15/2023	WM	E, F, P, Q
TB-20230115	TB	570-124229-3	01/15/2023	WMQ	F
Outfall018_20230115_Comp	N	570-124230-1	01/15/2023	WM	A, C, H, J, K, L, M, N, O, U, V, W, Y
OUTFALL018_20230115_COMP_F	N	570-124230-3	01/15/2023	WM	H, J
Outfall018_20230114_Grab	N	570-124231-1	01/14/2023	WM	E, F, P, Q
TB-20230114	TB	570-124231-3	01/14/2023	WMQ	F
Outfall008_20230115_Comp	N	570-124233-1	01/15/2023	WM	C, H, J, K, L, N, O, U
Outfall008_20230115_Comp_F	N	570-124233-2	01/15/2023	WM	H, J
Outfall008_20230114_Grab	N	570-124236-1	01/14/2023	WM	E
Outfall009_20230115_Comp	N	570-124239-1	01/15/2023	WM	C, H, J, K, N, O
Outfall009_20230115_Comp_F	N	570-124239-2	01/15/2023	WM	H, J
Outfall009_20230114_Grab	N	570-124241-1	01/14/2023	WM	E
Outfall001_20230115_Comp	N	570-124243-1	01/15/2023	WM	A, C, H, J, K, L, M, N, O, U, V, W, Y
Outfall001_20230115_Comp_F	N	570-124243-3	01/15/2023	WM	H, J
Outfall001_20230114_Grab	N	570-124244-1	01/14/2023	WM	E, F, P, Q
TB-20230114	TB	570-124244-3	01/14/2023	WMQ	F
Outfall002_20230114_Grab	N	570-124245-1	01/14/2023	WM	E, F, P, Q
TB-20230114	TB	570-124245-3	01/14/2023	WMQ	F
Outfall002_20230115_Comp	N	570-124247-1	01/15/2023	WM	A, C, H, J, K, L, M, N, O, U, V, W, Y
Outfall002_20230115_Comp_F	N	570-124247-3	01/15/2023	WM	H, J
Outfall011_20230117_Comp	N	570-124392-1	01/17/2023	WM	A, C, H, J, K, L, M, N, O, U, V, W, Y
Outfall011_20230117_Comp_F	N	570-124392-3	01/17/2023	WM	H, J
Outfall001_20230120_Grab	N	570-124865-1	01/20/2023	WM	E, F, P, Q
TB-20230120	TB	570-124865-3	01/20/2023	WMQ	F
Outfall001_20230120_Comp	N	570-124868-1	01/20/2023	WM	A, C, H, J, K, L, M, N, O, U, V, W, Y
Outfall001_20230120_Comp_F	N	570-124868-3	01/20/2023	WM	H, J
Outfall002_20230120_Grab	N	570-124869-1	01/20/2023	WM	E, F, P, Q
TB-20230120	TB	570-124869-3	01/20/2023	WMQ	F
Outfall008_20230120_Grab	N	570-124870-1	01/20/2023	WM	E
Outfall009_20230120_Grab	N	570-124871-1	01/20/2023	WM	E
Outfall011_20230120_Grab	N	570-124872-1	01/20/2023	WM	E, F, P, Q
TB-20230120	TB	570-124872-3	01/20/2023	WMQ	F
Outfall011_20230120_Comp	N	570-124873-1	01/20/2023	WM	A, C, H, J, K, L, M, N, O, U, V, W, Y
Outfall011_20230120_Comp_F	N	570-124873-3	01/20/2023	WM	H, J
Outfall018_20230120_Grab	N	570-124874-1	01/20/2023	WM	E, F, P, Q
TB-20230120	TB	570-124874-3	01/20/2023	WMQ	F
Outfall002_20230121_Comp	N	570-124887-1	01/21/2023	WM	A, C, H, J, K, L, M, N, O, U, V, W, Y
Outfall002_20230121_Comp_F	N	570-124887-3	01/21/2023	WM	H, J
Outfall008_20230121_Comp	N	570-124890-1	01/21/2023	WM	C, H, J, K, L, N, O, U
Outfall008_20230121_Comp_F	N	570-124890-2	01/21/2023	WM	H, J
Outfall009_20230121_Comp	N	570-124891-1	01/21/2023	WM	C, H, J, K, N, O
Outfall009_20230121_Comp_F	N	570-124891-2	01/21/2023	WM	H, J
Outfall018_20230121_Comp	N	570-124898-1	01/21/2023	WM	A, C, H, J, K, L, M, N, O, U, V, W, Y
OUTFALL018_20230121_COMP_F	N	570-124898-3	01/21/2023	WM	H, J
ArroyoSimi_20230121_Grab	N	570-124899-1	01/21/2023	WM	H, I, J
Outfall009_20230130_Grab	N	570-125741-1	01/30/2023	WM	E
Outfall002_20230130_Grab	N	570-125743-1	01/30/2023	WM	E, F, P, Q
TB-20230130	TB	570-125743-3	01/30/2023	WMQ	F
Outfall009_20230131_Comp	N	570-125839-1	01/31/2023	WM	C, H, J, K, N, O
Outfall009_20230131_Comp_F	N	570-125839-2	01/31/2023	WM	H, J
Outfall002_20230131_Comp	N	570-125840-1	01/31/2023	WM	A, C, H, J, K, L, M, N, O, U, V, W, Y
Outfall002_20230131_Comp_F	N	570-125840-3	01/31/2023	WM	H, J
Outfall002_20230224_Comp	N	570-128840-1	02/24/2023	WM	A, C, H, J, K, L, M, N, O, U, V, W, Y
Outfall002_20230224_Comp_F	N	570-128840-3	02/24/2023	WM	H, J
Outfall018_20230224_Grab	N	570-128843-1	02/24/2023	WM	E, F, P, Q
Outfall002_20230223_Grab	N	570-128844-1	02/23/2023	WM	E, F, P, Q
Outfall009_20230224_Grab	N	570-128846-1	02/24/2023	WM	E
Outfall001_20230225_Grab	N	570-129006-1	02/25/2023	WM	E, F, P, Q
Outfall011_20230225_Grab	N	570-129007-1	02/25/2023	WM	E, F, P, Q

TABLE 2
SAMPLE ANALYSIS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Sample ID	Sample Type	Lab ID	Sample Date	Matrix	Method(s)[1]
Outfall008_20230225_Grab	N	570-129008-1	02/25/2023	WM	E
Outfall018_20230226_Comp	N	570-129084-1	02/26/2023	WM	A, C, H, J, K, L, M, N, O, U, V, W, Y
Outfall018_20230226_Comp_F	N	570-129084-3	02/26/2023	WM	H, J
Outfall009_20230304_Grab	N	570-129851-1	03/04/2023	WM	E
Outfall008_20230305_Grab	N	570-129926-1	03/05/2023	WM	E
Outfall009_20230306_Grab	N	570-129990-1	03/06/2023	WM	E
Outfall008_20230306_Grab	N	570-129991-1	03/06/2023	WM	E

TABLE 3
METHOD HOLDING TIMES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Letter Code	Analytic Method	Method Description	Holding Time
A	E608.3	Organochlorine Pesticides and PCBs	14 days extraction / 40 days analysis for liquid, unpreserved
B	SM2340	Hardness	180 days for liquid unpreserved
C	SM2540D	Total Suspended Solids	7 days
D	E525.2	Diazinon and Chlorpyrifos	24 hours / 30 days for diazinon 14 days / 30 days for chlorpyrifos
E	E1664	Oil and Grease (HEM)	28 days
F	E624.1	Volatile Organic Compounds (VOCs)	7 days unpreserved (CVE and Acrolein) 14 days preserved (all other VOCs)
G	E200.7	Metals, Total or Dissolved	180 days for liquid, preserved
H	E200.8	Metals (by Mass Spectrometer)	180 days for liquid, preserved. Filtration within 15 minutes of sampling.
I	E218.6	Chromium, Hexavalent and Trivalent	28 days for liquid, preserved 24 hours for liquid unpreserved
J	E245.1	Mercury	28 days
K	E300	Inorganic Ions: Nitrite/Nitrate, Nitrite (as N), Nitrate (as N), Sulfate, Chloride, and/or Fluoride	28 days for liquid unpreserved
L	E314.0	Perchlorate	28 days
M	E625.1SIM	Semi-Volatile Organic Compounds (SVOCs)	7 days / 40 days
N	KELADA-01	Cyanide	14 days
O	SM2540C	Total Dissolved Solids	7 days
P	SM2510	Specific Conductance	28 days
Q	SM2540F	Settleable Solids	7 days
R	SW8015D	Total Extractable Petroleum Hydrocarbons (Diesel Range Organics)	7 days extraction / 40 days analysis for liquid, unpreserved
S	SW8015V	Total Extractable Petroleum Hydrocarbons (Gasoline)	14 days
T	E624	2-Chloroethyl vinyl ether (CVE)	7 days unpreserved
U	E350.1	Ammonia	28 days
V	SM2130	Turbidity	48 hours
W	SM5210B	BOD5 (Biochemical Oxygen on Demand)	48 hours
X	SM5310D	Total Organic Carbon (TOC)	28 days for liquid, preserved
Y	SM5540	Surfactants as MBAS	48 hours
Z	SW8260SIM	1,4-Dioxane	7 days for liquid, preserved 14 days for liquid unpreserved
AA	SW8315	Methyl hydrazine	3 days extraction / 3 days analysis

TABLE 4
HOLDING TIMES/PRESERVATION
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG	Method	Sample ID, Violation, Qualification
570-122390-1	5540	Sample SWTS-18_Influent_20230103_Grab exceeded holding time, qualify data "J".
570-122386-1	8015B	However, the pH was outside the required criteria when verified by the laboratory, and corrective action was not possible: Outfall002_20230101_Grab (570-122386-1). The sample(s) were analyzed within 7 days per EPA recommendation. No qualifiers applied.
570-122678-1 570-122682-1	624.1	Method 624.1: The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following sample was received preserved with hydrochloric acid: TB-20230105 (570-122678-3), Outfall001_20230105_Grab (570-122682-1).. The requested target analyte list contains 2-Chloroethyl vinyl ether and/or Acrolein, which are acid-labile compounds that degrade in an acidic medium. Qualify both analytes "UJ".
570-122678-1 570-122682-1	624.1	The case narrative stated Method 624.1: Reanalysis of the following sample was performed outside of the analytical holding time due to over dilution in initial analysis : Outfall008_20230105_Grab (570-122678-1), Outfall001_20230105_Grab (570-122682-1). However, VOCs were analyzed within the holding times specified in the QAPP; therefore, no qualifiers were applied.
570-122682-1	1664A	Method 1664A, 3510C: The reference method requires samples to be preserved to a pH of 2. The following sample was received with insufficient preservation at a pH of 6: Outfall001_20230105_Grab (570-122682-1). The sample(s) was preserved to the appropriate pH in the laboratory. No qualifiers applied.
570-123038-1	245.1	Sample Outfall018_20230106_Comp_F was analyzed outside of analytical holding time, qualify result "UJ".
570-123256-1	624.1	Method 624.1: The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following sample was received preserved with hydrochloric acid: Outfall011_20230108_Grab (570-123256-1). The requested target analyte list contains 2-Chloroethyl vinyl ether and/or Acrolein, which are acid-labile compounds that degrade in an acidic medium. Qualify those two analytes "UJ"
570-123653-1	625.1SIM	Di-n-butylphthalate (DBP) was prepared outside of preparation holding time for sample Outfall010_20230111_Comp, qualify "UJ"
5701226783	624	The following samples were subcontracted to Weck and exceeded holding time for 2-Chloroethyl vinyl ether, qualify data "UJ".
	624	Outfall008_20230105_Grab
5701223863	624	Outfall002_20230101_Grab
5701225223	624	Outfall018_20230104_Grab
5701232582	624	Arroyo_Simi_20230109_Grab
5701232563	624	Outfall011_20230108_Grab

TABLE 4
HOLDING TIMES/PRESERVATION
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG	Method	Sample ID, Violation, Qualification
5701234173	624	Outfall010_20230110_Grab
		Diazinon extracted outside of holding time for the following, qualify UJ:
5701223774	525.2	ArroyoSimi_20230101_Grab
5701223815	525.2	Outfall009_20230102_Comp
5701229455	525.2	Outfall008_20230106_Comp
5701236535	525.2	Outfall010_20230111_Comp
5701230163	525.2	Outfall001_20230106_Comp
	8315	The following were extracted outside of holding time, qualify J/UJ:
5701230163	8315	Outfall001_20230106_Comp
5701230384	8315	Outfall018_20230106_Comp
5701223904	8315	Outfall002_20230102_Comp

TABLE 5
SURROGATE RECOVERY COMPLIANCE
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG	Method	Sample ID	Lab ID	Surrogate	Dilution	%R	Qualification	Affected Sample(s)
570-124230-1	625.1 SIM	Outfall018_20230115_Comp	570-124230-1	2,4,6-Tribromophenol	1x	132	J+/None	None, sample is non-detect

TABLE 6
LCS/LCSD
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG	Sample Type	Method	Batch ID	Analyte	%R/RPD	Qualifier	Affected Sample(s)
570-122377-1 570-123016-1	LCS	608.3	295061	Aroclor 1016	267%	J+/None	None, samples are ND
	LCSD	608.3	295061	Aroclor 1016	291%	J+/None	
	LCSD	608.3	295061	Aroclor 1260	149%	J+/None	
570-122945-1	LCS	608.3	294966	4,4'-DDD	159%	J+/None	
570-122945-1	LCSD	608.3	294966	4,4'-DDD	103% RPD=42	J+/None	
570-123016-1 570-123038-1 570-123258-1	LCSD	625.1	296124	4,6-Dinitro-2-methylphenol	137%	NA	No client samples analyzed for the indicated compound in the associated batch.
570-123038-1 570-123258-1	LCSD	608.3	295932	Aroclor 1016	301%	J+/None	None, samples are ND
	LCSD	608.3	295932	Aroclor 1260	147%	J+/None	
570-12391-1	LCSD	625.1SIM	298493	Benzidine	183% RPD=35	J+/None	No client samples analyzed for the indicated compound in the associated batch.
570-12391-1	LCS	608.3	297231	Aroclor 1016	292%	J+/None	No client samples analyzed for the indicated compound in the associated batch.
	LCSD				352%		
	LCS			Aroclor 1260	170%		No client samples analyzed for the indicated compound in the associated batch.
	LCSD				165%		
570-123653-1	LCS	625.1SIM	298807	2,4-Dinitrophenol	176%	J+/None	No client samples analyzed for the indicated compound in the associated batch.
	LCSD				187%		
	LCS			4,6-Dinitro-2-methylphenol	168%		
	LCSD				170%		
	LCS			Hexachlorocyclopentadiene	147%		
570-129084-1	LCS	625.1SIM	307279	2,4-Dinitrotoluene	129%	None	None, sample is within QAPP limits
570-125840-1	NA	NA	NA	NA	NA	NA	Case narrative stated that LCS was out for batch 570-302161 for alpha-BHC. However, no client samples were in that batch, and it is not reported on the SDG.

TABLE 7
MATRIX SPIKE SAMPLES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Lab Sample Number	Matrix Spike/Matrix Spike DuplicateClient Sample ID	Method(s)
570-122381-1 MS/MSD	Outfall009_20230102_Comp	200.7, 245.1
570-122381-1 MS/MSD	Outfall009_20230102_Comp_F	245.1
570-122390-MS/MSD	Outfall002_20230102_Comp	314.0, 200.7, 200.8, 245.1, 5540C
570-122390-MS/MSD	Outfall002_20230102_Comp_F	200.7, 200.8
570-123038-2 MS/MSD	Outfall018_20230106_Comp	218.6, 300.0, 245.1
570-123258-1 MS/MSD	Arroyo_Simi_20230109_Grab	200.8
570-123391-2 MS/MSD	Outfall011_20230110_Comp	218.6, 300.0, 200.7
570-123391-1 MS/MSD	Outfall011_20230110_Comp_F	200.8
570-123393-1 MS/MSD	Outfall009_20230110_Comp	200.8
570-123414-1 MS/MSD	Outfall002_20230110_Comp	314.0, 200.8
570-123650-1 MS/MSD	Outfall001_20230111_Comp	300.0
570-123653-2 MS/MSD	Outfall010_20230111_Comp_F	200.7, 200.8
570-124239-1 MS/MSD	Outfall009_20230115_Comp	200.8
570-124243-3 MS/MSD	Outfall001_20230115_Comp_F	245.1
570-124243-1 MS/MSD	Outfall001_20230115_Comp	Kelada-01, 5540C
570-124244-1 MS/MSD	Outfall001_20230114_Grab	624.1
570-124392-1 MS/MSD	Outfall011_20230117_Comp	200.8, 245.1, 5540C
570-124392-3 MS/MSD	Outfall011_20230117_Comp_F	200.8
570-124873-1 MS/MSD	Outfall011_20230120_Comp	200.8, 5540C
570-124873-3 MS/MSD	Outfall011_20230120_Comp_F	245.1
570-124890-1 MS/MSD	Outfall008_20230121_Comp	200.8
570-124890-2 MS/MSD	Outfall008_20230121_Comp_F	200.8
570-124891-1 MS/MSD	Outfall009_20230121_Comp	200.8
570-124899-1 MS/MSD	ArroyoSimi_20230121_Grab	245.1
570-125839-1 MS/MSD	Outfall009_20230131_Comp	200.8
570-125839-2 MS/MSD	Outfall009_20230131_Comp_F	200.8
570-125840-1 MS/MSD	Outfall002_20230131_Comp	200.8, 245.1, 5540C
570-125840-3 MS/MSD	Outfall002_20230131_Comp_F	200.8, 245.1
570-122945-1 MS/MSD	Outfall008_20230106_Comp	200.7, 200.8, 245.1
570-122945-2 MS/MSD	Outfall008_20230106_Comp_F	200.7, 200.8, 245.1
W3A1906-MS1 W3A1906-MSD1	Outfall010_20230111_Comp	525.2
W3A0956-MS1 W3A0956-MSD1	Outfall008_20230106_Comp	525.2
570-129084-1 MS/MSD	Outfall018_20230226_Comp	300.0, 245.1, 5540C
570-129084-3 MS/MSD	Outfall018_20230226_Comp_F	245.1
570-128840-1 MS/MSD	Outfall002_20230224_Comp	200.8, 5540C, 2540C
570-128840-3 MS/MSD	Outfall002_20230224_Comp_F	200.8, 245.1

TABLE 8
METHOD BLANK SAMPLE ANALYSIS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG	Method	Batch ID	Analyte Detected in Blank	Concentration (µg/L)	Qualifier	Affected Samples
570-122381-1 570-122390-1	200.8	294380	Selenium, Dissolved	0.609 J	RL U	Outfall002_20230102_Comp_F Outfall009_20230102_Comp_F
570-122390-1	200.8	294520	Antimony, Total	0.403 J	RL U	Outfall002_20230102_Comp
570-122390-1	200.8	294520	Manganese	1.00	NA	None, sample >10x blank
570-122522-1	624.1	293693	Methylene Chloride	0.686 J	NA	None, samples are non-detect
570-122959-1 570-123016-1 570-123038-1	200.8	295467	Copper, Total	0.329 J	J+	Outfall001_20230106_Comp
			Lead, Total	0.510 J	RL U	Outfall002_20230106_Comp Outfall001_20230106_Comp Outfall018_20230106_Comp
			Boron	20.1 J	NA	None, sample is >10x blank
570-123391-1 570-123393-1	200.8	295684	Zinc, Dissolved	2.95 J	RL U	OUTFALL011_20230110_COMP_F Outfall009_20230110_Comp_F
570-123653-1	625.1SIM	299094	Benzo(b)fluoranthene	0.127 J	NA	None, sample is non-detect
570-124247-1	200.8	297141	Iron	5.09 J	NA	None, sample is >10x blank
570-124868-1	200.8	298201	Lead, Total	0.142 J	RL U	Outfall001_20230120_Comp
570-124392-1	200.8	297371	Iron	6.36 J	NA	None, sample >10x blank
570-124392-1	200.8	297048	Lead, Dissolved	0.167 J	RL U	Outfall011_20230117_Comp_F
570-124873-1	200.8	298016/298201	Lead, Total	0.142 J	RL U	Outfall009_20230121_Comp
570-124873-1	200.8	298201	Manganese, Total	1.51	J+	Outfall011_20230120_Comp
570-124890-1	200.8	298597	Nickel, Dissolved	0.339 J	RL U	Outfall008_20230121_Comp_F Outfall009_20230121_Comp_F
570-125743-1	2540B	300404	Specific Conductance	2.94	NA	None, data is not qualified based on specific conductance method blanks
570-124887-1	200.8	298201	Lead, Total	0.142 J	NA	None, sample is non-detect
570-128840-1	200.8	308055	Iron, Total	3.80 J	J+	Outfall002_20230224_Comp
570-128840-1	200.8	307391	Iron, Dissolved	8.15 J	RL U	Outfall002_20230224_Comp_F

TABLE 9
LABORATORY DUPLICATE ANALYSIS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG	Lab Sample Number	Laboratory Duplicate Client Sample ID	Method(s)
570-122377-1	570-122377-1 DU	Arroyo Simi_20230101_Grab	2540D
570-122390-1	570-122390-2 DU	Outfall002_20230102_Comp	2130B
570-122959-1	570-122959-1 DU	Outfall002_20230106_Comp	2540D
570-123016-1	570-123016-1 DU	Outfall001_20230106_Comp	2540D
570-123038-1	570-123038-2 DU	Outfall018_20230106_Comp	2310B
570-123414-1	570-123414-1 DU	Outfall002_20230110_Comp	2130B
570-123650-1	570-123650-1 DU	Outfall001_20230111_Comp	2130B
570-124239-1	570-124239-1 DU	Outfall009_20230115_Comp	2540D
570-124243-1	570-124243-1 DU	Outfall001_20230115_Comp	2130B, 2540D
570-124247-1	570-124247-1 DU	Outfall002_20230115_Comp	2540D
570-124868-1	570-124868-1 DU	Outfall001_20230120_Comp	2130B
570-124873-1	570-124873-1 DU	Outfall011_20230120_Comp	5210B
570-124898-1	570-124898-1 DU	Outfall018_20230121_Comp	2130B
570-125840-1	570-125840-1 DU	Outfall002_20230131_Comp	5540C
570-128840-1	570-128840-1 DU	Outfall002_20230224_Comp	2540C, 5210B

TABLE 10
SYSTEM PERFORMANCE SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701223774	Arroyo Simi	ArroyoSimi_20230101_Grab	1/1/2023	3A04002-01	E525.2	Diazinon	ND	U	UJ	H	µg/L	
5701223811	OUTFALL 009	Outfall009_20230102_Comp	1/2/2023	570-122381-1	E200.8	Antimony	0.65	J,DX	J	DNQ	µg/L	
5701223811	OUTFALL 009	Outfall009_20230102_Comp	1/2/2023	570-122381-1	E625.1SIM	Benzo(b)fluoranthene	0.16	J,DX	J	DNQ	µg/L	
5701223811	OUTFALL 009	Outfall009_20230102_Comp	1/2/2023	570-122381-1	E200.7	Boron	42	J,DX	J	DNQ	µg/L	
5701223811	OUTFALL 009	Outfall009_20230102_Comp	1/2/2023	570-122381-1	E300	Chloride	3.5	J,DX	J	DNQ	mg/L	
5701223811	OUTFALL 009	Outfall009_20230102_Comp	1/2/2023	570-122381-1	E200.8	Chromium	1.7	J,DX	J	DNQ	µg/L	
5701223811	OUTFALL 009	Outfall009_20230102_Comp	1/2/2023	570-122381-1	E218.6	Chromium VI (Hexavalent)	0.073	JDXBUBV	J	DNQ	µg/L	
5701223811	OUTFALL 009	Outfall009_20230102_Comp	1/2/2023	570-122381-1	E625.1SIM	Dimethyl phthalate	0.16	J,DX	J	DNQ	µg/L	
5701223811	OUTFALL 009	Outfall009_20230102_Comp	1/2/2023	570-122381-1	E200.8	Silver	0.34	J,DX	J	DNQ	µg/L	
5701223811	OUTFALL 009	Outfall009_20230102_Comp	1/2/2023	570-122381-1	E300	Sulfate	3.1	J,DX	J	DNQ	mg/L	
5701223811	OUTFALL 009	Outfall009_20230102_Comp	1/2/2023	570-122381-1	E200.8	Zinc	14	J,DX	J	DNQ	µg/L	
5701223811	OUTFALL 009	Outfall009_20230102_Comp_F	1/2/2023	570-122381-2	E200.8	Antimony	1	J,DXBU	J	DNQ	µg/L	
5701223811	OUTFALL 009	Outfall009_20230102_Comp_F	1/2/2023	570-122381-2	E200.8	Arsenic	0.92	J,DXBU	J	DNQ	µg/L	
5701223811	OUTFALL 009	Outfall009_20230102_Comp_F	1/2/2023	570-122381-2	E200.7	Boron	39	J,DXBU	J	DNQ	µg/L	
5701223811	OUTFALL 009	Outfall009_20230102_Comp_F	1/2/2023	570-122381-2	E200.8	Chromium	0.54	J,DXBU	J	DNQ	µg/L	
5701223811	OUTFALL 009	Outfall009_20230102_Comp_F	1/2/2023	570-122381-2	E200.8	Lead	0.37	J,DXBU	J	DNQ	µg/L	
5701223811	OUTFALL 009	Outfall009_20230102_Comp_F	1/2/2023	570-122381-2	E200.8	Nickel	1.5	J,DXBU	J	DNQ	µg/L	
5701223811	OUTFALL 009	Outfall009_20230102_Comp_F	1/2/2023	570-122381-2	E200.8	Selenium	0.88	JDXBUMB	U	B	µg/L	Report RL U. Prior to validation, result=0.88 J, MDL=0.52, RL=2.0
5701223811	OUTFALL 009	Outfall009_20230102_Comp_F	1/2/2023	570-122381-2	E200.8	Vanadium	1.2	J,DXBU	J	DNQ	µg/L	
5701223811	OUTFALL 009	Outfall009_20230102_Comp_F	1/2/2023	570-122381-2	E200.8	Zinc	6.5	J,DXBU	J	DNQ	µg/L	
5701223815	OUTFALL 009	Outfall009_20230102_Comp	1/2/2023	3A04001-01	E525.2	Diazinon	ND	U	UJ	H	µg/L	
5701223863	OUTFALL 002	Outfall002_20230101_Grab	1/1/2023	3B02091-01	E624	2-Chloroethyl vinyl ether	ND	U,O-09	UJ	H	µg/L	
5701223901	OUTFALL 002	Outfall002_20230102_Comp_F	1/2/2023	570-122390-1	E200.8	Antimony	0.76	J,DXBU	J	DNQ	µg/L	
5701223901	OUTFALL 002	Outfall002_20230102_Comp_F	1/2/2023	570-122390-1	E200.7	Boron	71	J,DXBU	J	DNQ	µg/L	
5701223901	OUTFALL 002	Outfall002_20230102_Comp_F	1/2/2023	570-122390-1	E200.8	Chromium	0.24	J,DXBU	J	DNQ	µg/L	
5701223901	OUTFALL 002	Outfall002_20230102_Comp_F	1/2/2023	570-122390-1	E200.8	Cobalt	0.19	J,DXBU	J	DNQ	µg/L	
5701223901	OUTFALL 002	Outfall002_20230102_Comp_F	1/2/2023	570-122390-1	E200.8	Nickel	0.99	J,DXBU	J	DNQ	µg/L	
5701223901	OUTFALL 002	Outfall002_20230102_Comp_F	1/2/2023	570-122390-1	E200.8	Selenium	0.88	JDXBUMB	U	B	µg/L	Report RL U. Prior to validation, result=0.88 J, MDL=0.52, RL=2.0
5701223901	OUTFALL 002	Outfall002_20230102_Comp_F	1/2/2023	570-122390-1	E200.8	Vanadium	1.4	J,DXBU	J	DNQ	µg/L	
5701223901	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	E200.8	Antimony	1.2	J,DXMB	U	B	µg/L	Report RL U. Prior to validation, result=1.2 J, MDL=0.36, RL=2.0
5701223901	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	E625.1SIM	Benzo(b)fluoranthene	0.15	J,DX	J	DNQ	µg/L	
5701223901	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	E200.7	Boron	78	J,DX	J	DNQ	µg/L	
5701223901	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	E200.8	Chromium	1.5	J,DX	J	DNQ	µg/L	
5701223901	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	E218.6	Chromium VI (Hexavalent)	0.043	JDXBUBV	J	DNQ	µg/L	
5701223901	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	E200.8	Cobalt	0.65	J,DX	J	DNQ	µg/L	
5701223901	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	E625.1SIM	Dimethyl phthalate	0.11	J,DX	J	DNQ	µg/L	
5701223901	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	E625.1SIM	Indeno(1,2,3-cd)pyrene	0.14	J,DX	J	DNQ	µg/L	
5701223901	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	E200.8	Lead	0.85	J,DX	J	DNQ	µg/L	
5701223901	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	E200.8	Nickel	1.9	J,DX	J	DNQ	µg/L	
5701223901	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	E200.8	Silver	0.28	J,DX	J	DNQ	µg/L	
5701223901	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	SM5540	Surfactants as MBAS	0.14	J,DX	J	DNQ	mg/L	
5701223901	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	570-122390-2	E200.8	Zinc	7.4	J,DX	J	DNQ	ug/L	
5701223904	OUTFALL 002	Outfall002_20230102_Comp	1/2/2023	3A09128-01	SW8315	Methyl hydrazine	ND	U,P-2	UJ	H	ug/L	
5701225223	OUTFALL 018	Outfall018_20230104_Grab	1/4/2023	3B02092-01	E624	2-Chloroethyl vinyl ether	ND	U,O-09	UJ	H	ug/L	
5701226781	TRIP BLANK	TB-20230105	1/5/2023	570-122678-3	E624.1	2-Chloroethyl vinyl ether	ND	U	UJ	*1	µg/L	
5701226781	TRIP BLANK	TB-20230105	1/5/2023	570-122678-3	E624.1	Acrolein	ND	U	UJ	*1	µg/L	
5701226783	OUTFALL 008	Outfall008_20230105_Grab	1/5/2023	3B02094-01	E624	2-Chloroethyl vinyl ether	ND	U,O-09	UJ	H	µg/L	
5701226821	OUTFALL 001	Outfall001_20230105_Grab	1/5/2023	570-122682-1	E624.1	2-Chloroethyl vinyl ether	ND	UBU	UJ	*1	µg/L	
5701226821	OUTFALL 001	Outfall001_20230105_Grab	1/5/2023	570-122682-1	E624.1	Acrolein	ND	UBU	UJ	*1	µg/L	
5701229451	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E350.1	Ammonia	0.041	J,DX	J	DNQ	mg/L	
5701229451	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E200.7	Boron	83	J,DX	J	DNQ	µg/L	
5701229451	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E300	Chloride	3.7	J,DX	J	DNQ	mg/L	
5701229451	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E218.6	Chromium VI (Hexavalent)	0.037	J,DX	J	DNQ	µg/L	
5701229451	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E625.1SIM	Dimethyl phthalate	0.1	J,DX	J	DNQ	µg/L	

TABLE 10
SYSTEM PERFORMANCE SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701229451	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E200.8	Lead	0.79	J,DX	J	DNQ	µg/L	
5701229451	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E245.1	Mercury	0.16	J,DX	J	DNQ	µg/L	
5701229451	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E314.0	Perchlorate	1.3	J,DX	J	DNQ	µg/L	
5701229451	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E300	Sulfate	3.3	J,DX	J	DNQ	mg/L	
5701229451	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	570-122945-1	E200.8	Zinc	8.5	J,DX	J	DNQ	µg/L	
5701229451	OUTFALL 008	Outfall008_20230106_Comp_F	1/6/2023	570-122945-2	E200.8	Antimony	1.6	J,DXBU	J	DNQ	µg/L	
5701229451	OUTFALL 008	Outfall008_20230106_Comp_F	1/6/2023	570-122945-2	E200.7	Boron	78	J,DXBU	J	DNQ	µg/L	
5701229451	OUTFALL 008	Outfall008_20230106_Comp_F	1/6/2023	570-122945-2	E200.8	Lead	0.14	J,DXBU	J	DNQ	µg/L	
5701229451	OUTFALL 008	Outfall008_20230106_Comp_F	1/6/2023	570-122945-2	E200.8	Nickel	1.4	J,DXBU	J	DNQ	µg/L	
5701229451	OUTFALL 008	Outfall008_20230106_Comp_F	1/6/2023	570-122945-2	E200.8	Silver	0.27	J,DXBU	J	DNQ	µg/L	
5701229451	OUTFALL 008	Outfall008_20230106_Comp_F	1/6/2023	570-122945-2	E200.8	Thallium	0.11	J,DXBU	J	DNQ	µg/L	
5701229451	OUTFALL 008	Outfall008_20230106_Comp_F	1/6/2023	570-122945-2	E200.8	Vanadium	1.3	J,DXBU	J	DNQ	µg/L	
5701229451	OUTFALL 008	Outfall008_20230106_Comp_F	1/6/2023	570-122945-2	E200.8	Zinc	3.9	J,DXBU	J	DNQ	µg/L	
5701229455	OUTFALL 008	Outfall008_20230106_Comp	1/6/2023	3A09030-01	E525.2	Diazinon	ND	U	UJ	H	µg/L	
5701229591	OUTFALL 002	Outfall002_20230106_Comp	1/6/2023	570-122959-1	E350.1	Ammonia	0.038	J,DX	J	DNQ	mg/L	
5701229591	OUTFALL 002	Outfall002_20230106_Comp	1/6/2023	570-122959-1	E200.8	Lead	1.1	MB	U	B	µg/L	Report as Result U. Prior to validation, MDL was 0.12 and RL was 1.0.
5701229591	OUTFALL 002	Outfall002_20230106_Comp	1/6/2023	570-122959-1	SM5540	Surfactants as MBAS	0.085	J,DX	J	DNQ	mg/L	
5701229591	OUTFALL 002	Outfall002_20230106_Comp	1/6/2023	570-122959-1	E200.8	Zinc	15	J,DX	J	DNQ	µg/L	
5701229591	OUTFALL 002	OUTFALL002_20230106_COMP_F	1/6/2023	570-122959-3	E200.8	Lead	0.13	J,DXBU	J	DNQ	µg/L	
5701229591	OUTFALL 002	OUTFALL002_20230106_COMP_F	1/6/2023	570-122959-3	E245.1	Mercury	0.14	J,DXBU	J	DNQ	µg/L	
5701229591	OUTFALL 002	OUTFALL002_20230106_COMP_F	1/6/2023	570-122959-3	E200.8	Zinc	2.9	J,DXBU	J	DNQ	µg/L	
5701230161	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E350.1	Ammonia	0.056	J,DX	J	DNQ	mg/L	
5701230161	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E200.8	Antimony	0.5	J,DX	J	DNQ	µg/L	
5701230161	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E200.8	Arsenic	0.98	J,DX	J	DNQ	µg/L	
5701230161	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E625.1SIM	Benzo(b)fluoranthene	0.12	J,DX	J	DNQ	µg/L	
5701230161	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E200.7	Boron	61	J,DX	J	DNQ	µg/L	
5701230161	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E300	Chloride	4.9	J,DX	J	DNQ	mg/L	
5701230161	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E200.8	Chromium	1.1	J,DX	J	DNQ	µg/L	
5701230161	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E218.6	Chromium VI (Hexavalent)	0.063	J,DX	J	DNQ	µg/L	
5701230161	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E200.8	Cobalt	0.51	J,DX	J	DNQ	µg/L	
5701230161	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E200.8	Copper	2.8	MB	J+	B	µg/L	
5701230161	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E608.3	delta-BHC	0.0044	PI	J	RPD, *III	µg/L	
5701230161	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E608.3	Heptachlor	0.0012	J,DXPI	J	RPDDNQ*III	µg/L	
5701230161	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E200.8	Lead	0.79	J,DXMB	U	B	µg/L	Report RL U. Prior to validation, result=0.79 J, MDL=0.12, RL=1.0
5701230161	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	SM5540	Surfactants as MBAS	0.11	J,DX	J	DNQ	mg/L	
5701230161	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	570-123016-1	E200.8	Zinc	13	J,DX	J	DNQ	µg/L	
5701230161	OUTFALL 001	OUTFALL001_20230106_COMP_F	1/6/2023	570-123016-3	E200.8	Antimony	0.47	J,DXBU	J	DNQ	µg/L	
5701230161	OUTFALL 001	OUTFALL001_20230106_COMP_F	1/6/2023	570-123016-3	E200.8	Arsenic	0.79	J,DXBU	J	DNQ	µg/L	
5701230161	OUTFALL 001	OUTFALL001_20230106_COMP_F	1/6/2023	570-123016-3	E200.7	Boron	59	J,DXBU	J	DNQ	µg/L	
5701230161	OUTFALL 001	OUTFALL001_20230106_COMP_F	1/6/2023	570-123016-3	E200.8	Chromium	0.39	J,DXBU	J	DNQ	µg/L	
5701230161	OUTFALL 001	OUTFALL001_20230106_COMP_F	1/6/2023	570-123016-3	E200.8	Cobalt	0.15	J,DXBU	J	DNQ	µg/L	
5701230161	OUTFALL 001	OUTFALL001_20230106_COMP_F	1/6/2023	570-123016-3	E200.8	Copper	1.8	J,DXBU	J	DNQ	µg/L	
5701230161	OUTFALL 001	OUTFALL001_20230106_COMP_F	1/6/2023	570-123016-3	E245.1	Mercury	0.16	J,DXBU	J	DNQ	µg/L	
5701230161	OUTFALL 001	OUTFALL001_20230106_COMP_F	1/6/2023	570-123016-3	E200.8	Nickel	1.7	J,DXBU	J	DNQ	µg/L	
5701230161	OUTFALL 001	OUTFALL001_20230106_COMP_F	1/6/2023	570-123016-3	E200.8	Vanadium	1.2	J,DXBU	J	DNQ	µg/L	
5701230161	OUTFALL 001	OUTFALL001_20230106_COMP_F	1/6/2023	570-123016-3	E200.8	Zinc	4.8	J,DXBU	J	DNQ	µg/L	
5701230163	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	3A06117-01	E525.2	Diazinon	ND	U	UJ	H	µg/L	
5701230163	OUTFALL 001	Outfall001_20230106_Comp	1/6/2023	3A06117-01	SW8315	Methyl hydrazine	ND	U	UJ	H	µg/L	
5701230381	OUTFALL 018	Outfall018_20230106_Comp_F	1/6/2023	570-123038-1	E200.8	Antimony	0.37	J,DXBU	J	DNQ	µg/L	
5701230381	OUTFALL 018	Outfall018_20230106_Comp_F	1/6/2023	570-123038-1	E200.8	Arsenic	0.26	J,DXBU	J	DNQ	µg/L	
5701230381	OUTFALL 018	Outfall018_20230106_Comp_F	1/6/2023	570-123038-1	E200.7	Boron	50	J,DXBU	J	DNQ	µg/L	
5701230381	OUTFALL 018	Outfall018_20230106_Comp_F	1/6/2023	570-123038-1	E200.8	Chromium	0.34	J,DXBU	J	DNQ	µg/L	
5701230381	OUTFALL 018	Outfall018_20230106_Comp_F	1/6/2023	570-123038-1	E200.8	Copper	1.6	J,DXBU	J	DNQ	µg/L	
5701230381	OUTFALL 018	Outfall018_20230106_Comp_F	1/6/2023	570-123038-1	E245.1	Mercury	ND	UBU	UJ	H	µg/L	

TABLE 10
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SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701230381	OUTFALL 018	Outfall018_20230106_Comp_F	1/6/2023	570-123038-1	E200.8	Nickel	1	J,DXBU	J	DNQ	µg/L	
5701230381	OUTFALL 018	Outfall018_20230106_Comp_F	1/6/2023	570-123038-1	E200.8	Vanadium	0.52	J,DXBU	J	DNQ	µg/L	
5701230381	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E350.1	Ammonia	0.064	J,DX	J	DNQ	mg/L	
5701230381	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E200.8	Antimony	0.36	J,DX	J	DNQ	µg/L	
5701230381	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E200.8	Arsenic	0.26	J,DX	J	DNQ	µg/L	
5701230381	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E200.7	Boron	58	J,DX	J	DNQ	µg/L	
5701230381	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E200.8	Chromium	0.41	J,DX	J	DNQ	µg/L	
5701230381	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E200.8	Lead	0.9	J,DXMB	U	B	µg/L	Report RL U. Prior to validation, result=0.90 J, MDL=0.12, RL=1.0
5701230381	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E200.8	Nickel	1.1	J,DX	J	DNQ	µg/L	
5701230381	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E300	Nitrite (as N)	0.097	J,DX	J	DNQ	mg/L	
5701230381	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	SM5540	Surfactants as MBAS	0.09	J,DX	J	DNQ	mg/L	
5701230381	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E200.8	Vanadium	0.51	J,DX	J	DNQ	µg/L	
5701230381	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	570-123038-2	E200.8	Zinc	13	J,DX	J	DNQ	µg/L	
5701230384	OUTFALL 018	Outfall018_20230106_Comp	1/6/2023	3A06118-01	SW8315	Methyl hydrazine	ND	U,P-2	UJ	H	µg/L	
5701232561	OUTFALL 011	Outfall011_20230108_Grab	1/8/2023	570-123256-1	E624.1	2-Chloroethyl vinyl ether	ND	U	UJ	*1	µg/L	
5701232561	OUTFALL 011	Outfall011_20230108_Grab	1/8/2023	570-123256-1	E624.1	Acrolein	ND	U	UJ	*1	µg/L	
5701232561	OUTFALL 011	Outfall011_20230108_Grab	1/8/2023	570-123256-1	E1664	Oil and Grease (HEM), Total	0.59	J,DX	J	DNQ	mg/L	
5701232563	OUTFALL 011	Outfall011_20230108_Grab	1/8/2023	3B02096-01	E624	2-Chloroethyl vinyl ether	ND	U,O-09	UJ	H	µg/L	
5701232581	Arroyo Simi	Arroyo_Simi_20230109_Grab	1/9/2023	570-123258-1	E200.8	Antimony	0.75	J,DX	J	DNQ	µg/L	
5701232581	Arroyo Simi	Arroyo_Simi_20230109_Grab	1/9/2023	570-123258-1	E625.1SIM	Benzo(b)fluoranthene	0.11	J,DX	J	DNQ	µg/L	
5701232581	Arroyo Simi	Arroyo_Simi_20230109_Grab	1/9/2023	570-123258-1	E200.8	Cadmium	0.32	J,DX	J	DNQ	µg/L	
5701232581	Arroyo Simi	Arroyo_Simi_20230109_Grab	1/9/2023	570-123258-1	E200.8	Lead	0.99	J,DX	J	DNQ	µg/L	
5701232581	Arroyo Simi	Arroyo_Simi_20230109_Grab	1/9/2023	570-123258-1	E200.8	Zinc	18	J,DX	J	DNQ	µg/L	
5701232582	Arroyo Simi	Arroyo_Simi_20230109_Grab	1/9/2023	3B02098-01	E624	2-Chloroethyl vinyl ether	ND	U,O-09	UJ	H	µg/L	
5701233911	OUTFALL 011	OUTFALL011_20230110_COMP_F	1/10/2023	570-123391-1	E200.8	Antimony	0.62	J,DXBU	J	DNQ	µg/L	
5701233911	OUTFALL 011	OUTFALL011_20230110_COMP_F	1/10/2023	570-123391-1	E200.7	Boron	62	J,DXBU	J	DNQ	µg/L	
5701233911	OUTFALL 011	OUTFALL011_20230110_COMP_F	1/10/2023	570-123391-1	E200.8	Chromium	0.65	J,DXBU	J	DNQ	µg/L	
5701233911	OUTFALL 011	OUTFALL011_20230110_COMP_F	1/10/2023	570-123391-1	E200.8	Nickel	1.7	J,DXBU	J	DNQ	µg/L	
5701233911	OUTFALL 011	OUTFALL011_20230110_COMP_F	1/10/2023	570-123391-1	E200.8	Selenium	0.65	J,DXBU	J	DNQ	µg/L	
5701233911	OUTFALL 011	OUTFALL011_20230110_COMP_F	1/10/2023	570-123391-1	E200.8	Vanadium	1.1	J,DXBU	J	DNQ	µg/L	
5701233911	OUTFALL 011	OUTFALL011_20230110_COMP_F	1/10/2023	570-123391-1	E200.8	Zinc	13	JDXBUMB	U	B	µg/L	Report RL U. Prior to validation, result=13 J, MDL=2.8, RL=20
5701233911	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E350.1	Ammonia	0.059	J,DX	J	DNQ	mg/L	
5701233911	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E200.8	Antimony	0.47	J,DX	J	DNQ	µg/L	
5701233911	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E625.1SIM	bis(2-Ethylhexyl)phthalate	3.9	J,DX	J	DNQ	µg/L	
5701233911	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E200.7	Boron	64	J,DX	J	DNQ	µg/L	
5701233911	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E200.8	Chromium	0.69	J,DX	J	DNQ	µg/L	
5701233911	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E218.6	Chromium VI (Hexavalent)	0.067	J,DX	J	DNQ	µg/L	
5701233911	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E200.8	Cobalt	0.19	J,DX	J	DNQ	µg/L	
5701233911	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E200.8	Lead	0.4	J,DX	J	DNQ	µg/L	
5701233911	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E200.8	Nickel	1.7	J,DX	J	DNQ	µg/L	
5701233911	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	SM5540	Surfactants as MBAS	0.12	J,DX	J	DNQ	mg/L	
5701233911	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E200.8	Vanadium	1.3	J,DX	J	DNQ	µg/L	
5701233911	OUTFALL 011	Outfall011_20230110_Comp	1/10/2023	570-123391-2	E200.8	Zinc	17	J,DX	J	DNQ	µg/L	
5701233931	OUTFALL 009	Outfall009_20230110_Comp	1/10/2023	570-123393-1	E200.8	Antimony	0.85	J,DX	J	DNQ	µg/L	
5701233931	OUTFALL 009	Outfall009_20230110_Comp	1/10/2023	570-123393-1	E200.8	Nickel	1.6	J,DX	J	DNQ	µg/L	
5701233931	OUTFALL 009	Outfall009_20230110_Comp	1/10/2023	570-123393-1	E200.8	Zinc	9.3	J,DX	J	DNQ	µg/L	
5701233931	OUTFALL 009	Outfall009_20230110_Comp_F	1/10/2023	570-123393-2	E200.8	Antimony	0.94	J,DXBU	J	DNQ	µg/L	
5701233931	OUTFALL 009	Outfall009_20230110_Comp_F	1/10/2023	570-123393-2	E200.8	Lead	0.3	J,DXBU	J	DNQ	µg/L	
5701233931	OUTFALL 009	Outfall009_20230110_Comp_F	1/10/2023	570-123393-2	E200.8	Nickel	1.4	J,DXBU	J	DNQ	µg/L	
5701233931	OUTFALL 009	Outfall009_20230110_Comp_F	1/10/2023	570-123393-2	E200.8	Selenium	0.66	J,DXBU	J	DNQ	µg/L	
5701233931	OUTFALL 009	Outfall009_20230110_Comp_F	1/10/2023	570-123393-2	E200.8	Zinc	4.6	JDXBUMB	U	B	µg/L	Report RL U. Prior to validation, result=4.6 J, MDL=2.8, RL=20
5701234141	OUTFALL 002	Outfall002_20230110_Comp	1/10/2023	570-123414-1	E200.8	Lead	0.27	J,DX	J	DNQ	µg/L	
5701234141	OUTFALL 002	Outfall002_20230110_Comp	1/10/2023	570-123414-1	E300	Nitrite (as N)	0.094	J,DX	J	DNQ	mg/L	
5701234141	OUTFALL 002	Outfall002_20230110_Comp	1/10/2023	570-123414-1	SM5540	Surfactants as MBAS	0.27	J,DX	J	DNQ	mg/L	

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SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701234141	OUTFALL 002	Outfall002_20230110_Comp	1/10/2023	570-123414-1	E200.8	Zinc	7.8	J,DX	J	DNQ	µg/L	
5701234141	OUTFALL 002	Outfall002_20230110_Comp_F	1/10/2023	570-123414-3	E200.8	Copper	1.3	J,DXBU	J	DNQ	µg/L	
5701234141	OUTFALL 002	Outfall002_20230110_Comp_F	1/10/2023	570-123414-3	E200.8	Iron	16	J,DXBU	J	DNQ	µg/L	
5701234141	OUTFALL 002	Outfall002_20230110_Comp_F	1/10/2023	570-123414-3	E200.8	Zinc	5.8	JDXBUMB	J	DNQ	µg/L	
5701234173	OUTFALL 010	Outfall010_20230110_Grab	1/10/2023	3B02099-01	E624	2-Chloroethyl vinyl ether	ND	U,O-09	UJ	H	µg/L	
5701236501	OUTFALL 001	Outfall001_20230111_Comp	1/11/2023	570-123650-1	E350.1	Ammonia	0.039	J,DX	J	DNQ	mg/L	
5701236501	OUTFALL 001	Outfall001_20230111_Comp	1/11/2023	570-123650-1	E200.8	Lead	0.58	J,DX	J	DNQ	µg/L	
5701236501	OUTFALL 001	Outfall001_20230111_Comp	1/11/2023	570-123650-1	SM5540	Surfactants as MBAS	0.14	J,DX	J	DNQ	mg/L	
5701236501	OUTFALL 001	Outfall001_20230111_Comp	1/11/2023	570-123650-1	E200.8	Zinc	8.9	J,DX	J	DNQ	µg/L	
5701236501	OUTFALL 001	Outfall001_20230111_Comp_F	1/11/2023	570-123650-3	E200.8	Zinc	3.4	J,DXBU	J	DNQ	µg/L	
5701236531	OUTFALL 010	Outfall010_20230111_Comp	1/11/2023	570-123653-1	E200.8	Antimony	0.41	J,DX	J	DNQ	µg/L	
5701236531	OUTFALL 010	Outfall010_20230111_Comp	1/11/2023	570-123653-1	E200.7	Boron	71	J,DX	J	DNQ	µg/L	
5701236531	OUTFALL 010	Outfall010_20230111_Comp	1/11/2023	570-123653-1	E218.6	Chromium VI (Hexavalent)	0.094	J,DX	J	DNQ	µg/L	
5701236531	OUTFALL 010	Outfall010_20230111_Comp	1/11/2023	570-123653-1	E625.1SIM	Di-n-butylphthalate (DBP)	ND	UBU	UJ	H	µg/L	
5701236531	OUTFALL 010	Outfall010_20230111_Comp	1/11/2023	570-123653-1	E300	Fluoride	0.085	J,DX	J	DNQ	mg/L	
5701236531	OUTFALL 010	Outfall010_20230111_Comp	1/11/2023	570-123653-1	E200.8	Nickel	1.5	J,DX	J	DNQ	µg/L	
5701236531	OUTFALL 010	Outfall010_20230111_Comp	1/11/2023	570-123653-1	E200.8	Vanadium	1.8	J,DX	J	DNQ	µg/L	
5701236531	OUTFALL 010	Outfall010_20230111_Comp	1/11/2023	570-123653-1	E200.8	Zinc	8.7	J,DX	J	DNQ	µg/L	
5701236531	OUTFALL 010	Outfall010_20230111_Comp_F	1/11/2023	570-123653-2	E200.8	Antimony	0.46	J,DXBU	J	DNQ	µg/L	
5701236531	OUTFALL 010	Outfall010_20230111_Comp_F	1/11/2023	570-123653-2	E200.7	Boron	68	J,DXBU	J	DNQ	µg/L	
5701236531	OUTFALL 010	Outfall010_20230111_Comp_F	1/11/2023	570-123653-2	E200.8	Lead	0.27	J,DXBU	J	DNQ	µg/L	
5701236531	OUTFALL 010	Outfall010_20230111_Comp_F	1/11/2023	570-123653-2	E200.8	Nickel	1.1	J,DXBU	J	DNQ	µg/L	
5701236531	OUTFALL 010	Outfall010_20230111_Comp_F	1/11/2023	570-123653-2	E200.8	Vanadium	1.3	J,DXBU	J	DNQ	µg/L	
5701236531	OUTFALL 010	Outfall010_20230111_Comp_F	1/11/2023	570-123653-2	E200.8	Zinc	4.2	J,DXBU	J	DNQ	µg/L	
5701236535	OUTFALL 010	Outfall010_20230111_Comp	1/11/2023	3A11195-01	E525.2	Diazinon	ND	U	UJ	H	µg/L	
5701236651	OUTFALL 018	Outfall018_20230111_Comp	1/11/2023	570-123665-1	E350.1	Ammonia	0.041	J,DX	J	DNQ	mg/L	
5701236651	OUTFALL 018	Outfall018_20230111_Comp	1/11/2023	570-123665-1	E200.8	Iron	6.8	J,DX	J	DNQ	µg/L	
5701236651	OUTFALL 018	Outfall018_20230111_Comp	1/11/2023	570-123665-1	E200.8	Lead	0.15	J,DX	J	DNQ	µg/L	
5701236651	OUTFALL 018	Outfall018_20230111_Comp	1/11/2023	570-123665-1	E300	Nitrite (as N)	0.076	J,DX	J	DNQ	mg/L	
5701236651	OUTFALL 018	Outfall018_20230111_Comp_F	1/11/2023	570-123665-3	E200.8	Copper	1.1	J,DXBU	J	DNQ	µg/L	
5701236651	OUTFALL 018	Outfall018_20230111_Comp_F	1/11/2023	570-123665-3	E200.8	Iron	4.6	J,DXBU	J	DNQ	µg/L	
5701236701	OUTFALL 008	Outfall008_20230111_Comp	1/11/2023	570-123670-1	E200.8	Antimony	0.72	J,DX	J	DNQ	µg/L	
5701236701	OUTFALL 008	Outfall008_20230111_Comp	1/11/2023	570-123670-1	E200.8	Lead	0.68	J,DX	J	DNQ	µg/L	Report RL U. Prior to validation, result=0.68 J, MDL=0.12, RL=1.0
5701236701	OUTFALL 008	Outfall008_20230111_Comp	1/11/2023	570-123670-1	E200.8	Nickel	1.8	J,DX	J	DNQ	µg/L	
5701236701	OUTFALL 008	Outfall008_20230111_Comp	1/11/2023	570-123670-1	E300	Nitrite (as N)	0.092	J,DX	J	DNQ	mg/L	
5701236701	OUTFALL 008	Outfall008_20230111_Comp	1/11/2023	570-123670-1	E314.0	Perchlorate	1.1	J,DX	J	DNQ	µg/L	
5701236701	OUTFALL 008	Outfall008_20230111_Comp	1/11/2023	570-123670-1	E200.8	Zinc	9.7	J,DX	J	DNQ	µg/L	
5701236701	OUTFALL 008	OUTFALL008_20230111_COMP_F	1/11/2023	570-123670-2	E200.8	Antimony	1	J,DXBU	J	DNQ	µg/L	
5701236701	OUTFALL 008	OUTFALL008_20230111_COMP_F	1/11/2023	570-123670-2	E200.8	Nickel	1.6	J,DXBU	J	DNQ	µg/L	
5701236701	OUTFALL 008	OUTFALL008_20230111_COMP_F	1/11/2023	570-123670-2	E200.8	Zinc	7.1	J,DXBU	J	DNQ	µg/L	
5701242301	OUTFALL 018	Outfall018_20230115_Comp	1/15/2023	570-124230-1	E200.8	Copper	1.9	J,DX	J	DNQ	µg/L	
5701242301	OUTFALL 018	Outfall018_20230115_Comp	1/15/2023	570-124230-1	E200.8	Lead	0.23	J,DX	J	DNQ	µg/L	
5701242301	OUTFALL 018	Outfall018_20230115_Comp	1/15/2023	570-124230-1	E300	Nitrite (as N)	0.1	J,DX	J	DNQ	mg/L	
5701242301	OUTFALL 018	Outfall018_20230115_Comp	1/15/2023	570-124230-1	SM5540	Surfactants as MBAS	0.11	J,DX	J	DNQ	mg/L	
5701242301	OUTFALL 018	Outfall018_20230115_Comp	1/15/2023	570-124230-1	E200.8	Zinc	4.6	J,DX	J	DNQ	µg/L	
5701242301	OUTFALL 018	OUTFALL018_20230115_COMP_F	1/15/2023	570-124230-3	E200.8	Copper	1.7	J,DXBU	J	DNQ	µg/L	
5701242301	OUTFALL 018	OUTFALL018_20230115_COMP_F	1/15/2023	570-124230-3	E200.8	Iron	17	J,DXBU	J	DNQ	µg/L	
5701242301	OUTFALL 018	OUTFALL018_20230115_COMP_F	1/15/2023	570-124230-3	E200.8	Zinc	3.4	J,DXBU	J	DNQ	µg/L	
5701242331	OUTFALL 008	Outfall008_20230115_Comp	1/15/2023	570-124233-1	E300	Chloride	4.5	J,DX	J	DNQ	mg/L	
5701242331	OUTFALL 008	Outfall008_20230115_Comp	1/15/2023	570-124233-1	E200.8	Copper	1.9	J,DX	J	DNQ	µg/L	
5701242331	OUTFALL 008	Outfall008_20230115_Comp	1/15/2023	570-124233-1	E200.8	Lead	0.41	J,DX	J	DNQ	µg/L	
5701242331	OUTFALL 008	Outfall008_20230115_Comp	1/15/2023	570-124233-1	E200.8	Nickel	1.5	J,DX	J	DNQ	µg/L	
5701242331	OUTFALL 008	Outfall008_20230115_Comp	1/15/2023	570-124233-1	E300	Sulfate	4.5	J,DX	J	DNQ	mg/L	
5701242331	OUTFALL 008	Outfall008_20230115_Comp	1/15/2023	570-124233-1	E200.8	Zinc	5	J,DX	J	DNQ	µg/L	

TABLE 10
SYSTEM PERFORMANCE SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701242331	OUTFALL 008	Outfall008_20230115_Comp_F	1/15/2023	570-124233-2	E200.8	Copper	1.7	J,DXBU	J	DNQ	µg/L	
5701242331	OUTFALL 008	Outfall008_20230115_Comp_F	1/15/2023	570-124233-2	E200.8	Nickel	1.4	J,DXBU	J	DNQ	µg/L	
5701242331	OUTFALL 008	Outfall008_20230115_Comp_F	1/15/2023	570-124233-2	E200.8	Zinc	3.3	J,DXBU	J	DNQ	µg/L	
5701242391	OUTFALL 009	Outfall009_20230115_Comp	1/15/2023	570-124239-1	E200.8	Antimony	1.5	J,DX	J	DNQ	µg/L	
5701242391	OUTFALL 009	Outfall009_20230115_Comp	1/15/2023	570-124239-1	E300	Chloride	4	J,DX	J	DNQ	mg/L	
5701242391	OUTFALL 009	Outfall009_20230115_Comp	1/15/2023	570-124239-1	E200.8	Nickel	1.7	J,DX	J	DNQ	µg/L	
5701242391	OUTFALL 009	Outfall009_20230115_Comp	1/15/2023	570-124239-1	E300	Sulfate	3.9	J,DX	J	DNQ	mg/L	
5701242391	OUTFALL 009	Outfall009_20230115_Comp	1/15/2023	570-124239-1	E200.8	Zinc	8.3	J,DX	J	DNQ	µg/L	
5701242391	OUTFALL 009	Outfall009_20230115_Comp_F	1/15/2023	570-124239-2	E200.8	Antimony	1.4	J,DXBU	J	DNQ	µg/L	
5701242391	OUTFALL 009	Outfall009_20230115_Comp_F	1/15/2023	570-124239-2	E200.8	Lead	0.46	J,DXBU	J	DNQ	µg/L	
5701242391	OUTFALL 009	Outfall009_20230115_Comp_F	1/15/2023	570-124239-2	E200.8	Nickel	1.4	J,DXBU	J	DNQ	µg/L	
5701242391	OUTFALL 009	Outfall009_20230115_Comp_F	1/15/2023	570-124239-2	E200.8	Zinc	6.3	J,DXBU	J	DNQ	µg/L	
5701242411	OUTFALL 009	Outfall009_20230114_Grab	1/14/2023	570-124241-1	E1664	Oil and Grease (HEM), Total	0.69	J,DX	J	DNQ	mg/L	
5701242431	OUTFALL 001	Outfall001_20230115_Comp	1/15/2023	570-124243-1	SM5540	Surfactants as MBAS	0.069	J,DX	J	DNQ	mg/L	
5701242431	OUTFALL 001	Outfall001_20230115_Comp	1/15/2023	570-124243-1	E200.8	Zinc	8.1	J,DX	J	DNQ	µg/L	
5701242431	OUTFALL 001	Outfall001_20230115_Comp_F	1/15/2023	570-124243-3	E200.8	Copper	1.8	J,DXBU	J	DNQ	µg/L	
5701242431	OUTFALL 001	Outfall001_20230115_Comp_F	1/15/2023	570-124243-3	E200.8	Lead	0.14	J,DXBU	J	DNQ	µg/L	
5701242471	OUTFALL 002	Outfall002_20230115_Comp	1/15/2023	570-124247-1	E200.8	Lead	0.74	J,DX	J	DNQ	µg/L	
5701242471	OUTFALL 002	Outfall002_20230115_Comp	1/15/2023	570-124247-1	E200.8	Selenium	0.61	J,DX	J	DNQ	µg/L	
5701242471	OUTFALL 002	Outfall002_20230115_Comp	1/15/2023	570-124247-1	SM5540	Surfactants as MBAS	0.091	J,DX	J	DNQ	mg/L	
5701242471	OUTFALL 002	Outfall002_20230115_Comp	1/15/2023	570-124247-1	E200.8	Zinc	7.5	J,DX	J	DNQ	µg/L	
5701242471	OUTFALL 002	Outfall002_20230115_Comp_F	1/15/2023	570-124247-3	E200.8	Copper	1.5	J,DXBU	J	DNQ	µg/L	
5701242471	OUTFALL 002	Outfall002_20230115_Comp_F	1/15/2023	570-124247-3	E200.8	Selenium	0.54	J,DXBU	J	DNQ	µg/L	
5701243921	OUTFALL 011	Outfall011_20230117_Comp	1/17/2023	570-124392-1	SM5210B	Biochemical Oxygen Demand (BOD)	1	J,DX	J	DNQ	mg/L	
5701243921	OUTFALL 011	Outfall011_20230117_Comp	1/17/2023	570-124392-1	E200.8	Lead	0.85	J,DX	J	DNQ	µg/L	
5701243921	OUTFALL 011	Outfall011_20230117_Comp	1/17/2023	570-124392-1	SM5540	Surfactants as MBAS	0.14	J,DX	J	DNQ	mg/L	
5701243921	OUTFALL 011	Outfall011_20230117_Comp	1/17/2023	570-124392-1	E200.8	Zinc	7.1	J,DX	J	DNQ	µg/L	
5701243921	OUTFALL 011	Outfall011_20230117_Comp_F	1/17/2023	570-124392-3	E200.8	Lead	0.22	JDXBUMB	U	B	µg/L	Report RL U. Prior to validation, result=0.22 J, MDL=0.12, RL=1.0
5701243921	OUTFALL 011	Outfall011_20230117_Comp_F	1/17/2023	570-124392-3	E200.8	Zinc	3.9	J,DXBU	J	DNQ	µg/L	
5701248681	OUTFALL 001	Outfall001_20230120_Comp	1/20/2023	570-124868-1	E350.1	Ammonia	0.035	J,DX	J	DNQ	mg/L	
5701248681	OUTFALL 001	Outfall001_20230120_Comp	1/20/2023	570-124868-1	E200.8	Lead	0.27	J,DXMB	J	DNQ	µg/L	
5701248681	OUTFALL 001	Outfall001_20230120_Comp	1/20/2023	570-124868-1	SM5540	Surfactants as MBAS	0.069	J,DX	J	DNQ	mg/L	
5701248681	OUTFALL 001	Outfall001_20230120_Comp	1/20/2023	570-124868-1	E200.8	Zinc	4.2	J,DX	J	DNQ	µg/L	
5701248681	OUTFALL 001	Outfall001_20230120_Comp_F	1/20/2023	570-124868-3	E200.8	Lead	0.13	J,DXBU	J	DNQ	µg/L	
5701248681	OUTFALL 001	Outfall001_20230120_Comp_F	1/20/2023	570-124868-3	E200.8	Zinc	6.4	J,DXBU	J	DNQ	µg/L	
5701248691	OUTFALL 002	Outfall002_20230120_Grab	1/20/2023	570-124869-1	E1664	Oil and Grease (HEM), Total	0.6	J,DX	J	DNQ	mg/L	
5701248731	OUTFALL 011	Outfall011_20230120_Comp	1/20/2023	570-124873-1	E350.1	Ammonia	0.056	J,DX	J	DNQ	mg/L	
5701248731	OUTFALL 011	Outfall011_20230120_Comp	1/20/2023	570-124873-1	E200.8	Copper	1.4	J,DX	J	DNQ	µg/L	
5701248731	OUTFALL 011	Outfall011_20230120_Comp	1/20/2023	570-124873-1	E200.8	Lead	0.13	J,DXMB	U	B	µg/L	Report RL U. Prior to validation, result=0.13 J, MDL=0.12, RL=1.0
5701248731	OUTFALL 011	Outfall011_20230120_Comp	1/20/2023	570-124873-1	E200.8	Manganese	5.1		J+	B	µg/L	
5701248731	OUTFALL 011	Outfall011_20230120_Comp	1/20/2023	570-124873-1	E200.8	Zinc	2.9	J,DX	J	DNQ	µg/L	
5701248731	OUTFALL 011	Outfall011_20230120_Comp_F	1/20/2023	570-124873-3	E200.8	Copper	1.2	J,DXBU	J	DNQ	µg/L	
5701248741	OUTFALL 018	Outfall018_20230120_Grab	1/20/2023	570-124874-1	E1664	Oil and Grease (HEM), Total	0.6	J,DX	J	DNQ	mg/L	
5701248871	OUTFALL 002	Outfall002_20230121_Comp	1/21/2023	570-124887-1	E625.1SIM	2,4-Dinitrotoluene	0.12	J,DX	J	DNQ	µg/L	
5701248871	OUTFALL 002	Outfall002_20230121_Comp	1/21/2023	570-124887-1	E200.8	Copper	1.7	J,DX	J	DNQ	µg/L	
5701248871	OUTFALL 002	Outfall002_20230121_Comp	1/21/2023	570-124887-1	E200.8	Iron	13	J,DX	J	DNQ	µg/L	
5701248871	OUTFALL 002	Outfall002_20230121_Comp_F	1/21/2023	570-124887-3	E200.8	Copper	1.5	J,DXBU	J	DNQ	µg/L	
5701248871	OUTFALL 002	Outfall002_20230121_Comp_F	1/21/2023	570-124887-3	E200.8	Iron	4.7	J,DXBU	J	DNQ	µg/L	
5701248901	OUTFALL 008	Outfall008_20230121_Comp	1/21/2023	570-124890-1	E200.8	Antimony	0.8	J,DX	J	DNQ	µg/L	
5701248901	OUTFALL 008	Outfall008_20230121_Comp	1/21/2023	570-124890-1	E200.8	Copper	1.4	J,DX	J	DNQ	µg/L	
5701248901	OUTFALL 008	Outfall008_20230121_Comp	1/21/2023	570-124890-1	E200.8	Nickel	1.4	J,DX	J	DNQ	µg/L	
5701248901	OUTFALL 008	Outfall008_20230121_Comp_F	1/21/2023	570-124890-2	E200.8	Antimony	0.91	J,DXBU	J	DNQ	µg/L	
5701248901	OUTFALL 008	Outfall008_20230121_Comp_F	1/21/2023	570-124890-2	E200.8	Copper	1.3	J,DXBU	J	DNQ	µg/L	
5701248901	OUTFALL 008	Outfall008_20230121_Comp_F	1/21/2023	570-124890-2	E200.8	Nickel	1.2	JDXBUMB	U	B	µg/L	Report RL U. Prior to validation, result=1.2 J, MDL=0.17, RL=2.0

TABLE 10
SYSTEM PERFORMANCE SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701248911	OUTFALL 009	Outfall009_20230121_Comp	1/21/2023	570-124891-1	E200.8	Antimony	1.8	J,DX	J	DNQ	µg/L	
5701248911	OUTFALL 009	Outfall009_20230121_Comp	1/21/2023	570-124891-1	E200.8	Lead	0.14	J,DXMB	U	B	µg/L	Report RL U. Prior to validation, result=0.14 J, MDL=0.12, RL=1.0
5701248911	OUTFALL 009	Outfall009_20230121_Comp	1/21/2023	570-124891-1	E200.8	Nickel	1.8	J,DX	J	DNQ	µg/L	
5701248911	OUTFALL 009	Outfall009_20230121_Comp	1/21/2023	570-124891-1	E200.8	Zinc	3.5	J,DX	J	DNQ	µg/L	
5701248911	OUTFALL 009	Outfall009_20230121_Comp_F	1/21/2023	570-124891-2	E200.8	Antimony	1.9	J,DXBU	J	DNQ	µg/L	
5701248911	OUTFALL 009	Outfall009_20230121_Comp_F	1/21/2023	570-124891-2	E200.8	Nickel	1.7	JDXBUMB	U	B	µg/L	Report RL U. Prior to validation, result=1.7 J, MDL=0.17, RL=2.0
5701248911	OUTFALL 009	Outfall009_20230121_Comp_F	1/21/2023	570-124891-2	E200.8	Zinc	3.6	J,DXBU	J	DNQ	µg/L	
5701248981	OUTFALL 018	Outfall018_20230121_Comp	1/21/2023	570-124898-1	E350.1	Ammonia	0.037	J,DX	J	DNQ	mg/L	
5701248981	OUTFALL 018	Outfall018_20230121_Comp	1/21/2023	570-124898-1	E200.8	Copper	1.5	J,DX	J	DNQ	µg/L	
5701248981	OUTFALL 018	Outfall018_20230121_Comp	1/21/2023	570-124898-1	E200.8	Iron	4.1	J,DX	J	DNQ	µg/L	
5701248981	OUTFALL 018	Outfall018_20230121_Comp	1/21/2023	570-124898-1	SM2540D	Total Suspended Solids (TSS)	1.8	J,DX	J	DNQ	mg/L	
5701248981	OUTFALL 018	OUTFALL018_20230121_COMP_F	1/21/2023	570-124898-3	E200.8	Copper	1.4	J,DXBU	J	DNQ	µg/L	
5701248991	Arroyo Simi	ArroyoSimi_20230121_Grab	1/21/2023	570-124899-1	E200.8	Chromium	1	J,DX	J	DNQ	µg/L	
5701248991	Arroyo Simi	ArroyoSimi_20230121_Grab	1/21/2023	570-124899-1	E245.1	Mercury	0.12	J,DX	J	DNQ	µg/L	
5701258391	OUTFALL 009	Outfall009_20230131_Comp	1/31/2023	570-125839-1	E200.8	Antimony	0.51	J,DX	J	DNQ	µg/L	
5701258391	OUTFALL 009	Outfall009_20230131_Comp	1/31/2023	570-125839-1	E200.8	Nickel	1.6	J,DX	J	DNQ	µg/L	
5701258391	OUTFALL 009	Outfall009_20230131_Comp_F	1/31/2023	570-125839-2	E200.8	Antimony	0.63	J,DXBU	J	DNQ	µg/L	
5701258391	OUTFALL 009	Outfall009_20230131_Comp_F	1/31/2023	570-125839-2	E200.8	Nickel	1.5	J,DXBU	J	DNQ	µg/L	
5701258391	OUTFALL 009	Outfall009_20230131_Comp_F	1/31/2023	570-125839-2	E200.8	Selenium	0.57	J,DXBU	J	DNQ	µg/L	
5701258391	OUTFALL 009	Outfall009_20230131_Comp_F	1/31/2023	570-125839-2	E200.8	Zinc	3.2	J,DXBU	J	DNQ	µg/L	
5701258401	OUTFALL 002	Outfall002_20230131_Comp	1/31/2023	570-125840-1	E200.8	Copper	1.4	J,DX	J	DNQ	µg/L	
5701258401	OUTFALL 002	Outfall002_20230131_Comp	1/31/2023	570-125840-1	E200.8	Iron	14	J,DX	J	DNQ	µg/L	
5701258401	OUTFALL 002	Outfall002_20230131_Comp_F	1/31/2023	570-125840-3	E200.8	Copper	1.4	J,DXBU	J	DNQ	µg/L	
5701258401	OUTFALL 002	Outfall002_20230131_Comp_F	1/31/2023	570-125840-3	E200.8	Iron	8.7	J,DXBU	J	DNQ	µg/L	
5701258401	OUTFALL 002	Outfall002_20230131_Comp_F	1/31/2023	570-125840-3	E245.1	Mercury	0.15	J,DXBU	J	DNQ	µg/L	
5701258401	OUTFALL 002	Outfall002_20230131_Comp_F	1/31/2023	570-125840-3	E200.8	Zinc	3	J,DXBU	J	DNQ	µg/L	
5701288401	OUTFALL 002	Outfall002_20230224_Comp	2/24/2023	570-128840-1	SM5210B	Biochemical Oxygen Demand (BOD)	1.5	J,DX	J	DNQ	mg/L	
5701288401	OUTFALL 002	Outfall002_20230224_Comp	2/24/2023	570-128840-1	E200.8	Copper	0.9	J,DX	J	DNQ	µg/L	
5701288401	OUTFALL 002	Outfall002_20230224_Comp	2/24/2023	570-128840-1	E200.8	Iron	37	MB	J+	B	µg/L	
5701288401	OUTFALL 002	Outfall002_20230224_Comp	2/24/2023	570-128840-1	E200.8	Lead	0.13	J,DX	J	DNQ	µg/L	
5701288401	OUTFALL 002	Outfall002_20230224_Comp	2/24/2023	570-128840-1	E300	Nitrate (as N)	0.075	J,DX	J	DNQ	mg/L	
5701288401	OUTFALL 002	Outfall002_20230224_Comp	2/24/2023	570-128840-1	E300	Nitrite/Nitrate	0.075	J,DX	J	DNQ	mg/L	
5701288401	OUTFALL 002	Outfall002_20230224_Comp_F	2/24/2023	570-128840-3	E200.8	Copper	0.97	J,DXBU	J	DNQ	µg/L	
5701288401	OUTFALL 002	Outfall002_20230224_Comp_F	2/24/2023	570-128840-3	E200.8	Iron	8	JDXBUMB	U	B	µg/L	Report RL U. Prior to validation, Result=8.0 J, MDL=3.7, RL=20.
5701288431	OUTFALL 018	Outfall018_20230224_Grab	2/24/2023	570-128843-1	E1664	Oil and Grease (HEM), Total	0.62	J,DX	J	DNQ	mg/L	
5701288461	OUTFALL 009	Outfall009_20230224_Grab	2/24/2023	570-128846-1	E1664	Oil and Grease (HEM), Total	0.68	J,DX	J	DNQ	mg/L	
5701290841	OUTFALL 018	Outfall018_20230226_Comp	2/26/2023	570-129084-1	SM5210B	Biochemical Oxygen Demand (BOD)	1	J,DX	J	DNQ	mg/L	
5701290841	OUTFALL 018	Outfall018_20230226_Comp	2/26/2023	570-129084-1	E200.8	Copper	1.7	J,DX	J	DNQ	µg/L	
5701290841	OUTFALL 018	Outfall018_20230226_Comp	2/26/2023	570-129084-1	E200.8	Lead	0.18	J,DX	J	DNQ	µg/L	
5701290841	OUTFALL 018	Outfall018_20230226_Comp	2/26/2023	570-129084-1	E300	Nitrate (as N)	0.11	J,DX	J	DNQ	mg/L	
5701290841	OUTFALL 018	Outfall018_20230226_Comp	2/26/2023	570-129084-1	SM5540	Surfactants as MBAS	0.059	J,DX	J	DNQ	mg/L	
5701290841	OUTFALL 018	Outfall018_20230226_Comp	2/26/2023	570-129084-1	E200.8	Zinc	3	J,DX	J	DNQ	µg/L	
5701290841	OUTFALL 018	Outfall018_20230226_Comp_F	2/26/2023	570-129084-3	E200.8	Copper	1.7	J,DXBU	J	DNQ	µg/L	
5701290841	OUTFALL 018	Outfall018_20230226_Comp_F	2/26/2023	570-129084-3	E200.8	Zinc	3.2	J,DXBU	J	DNQ	µg/L	