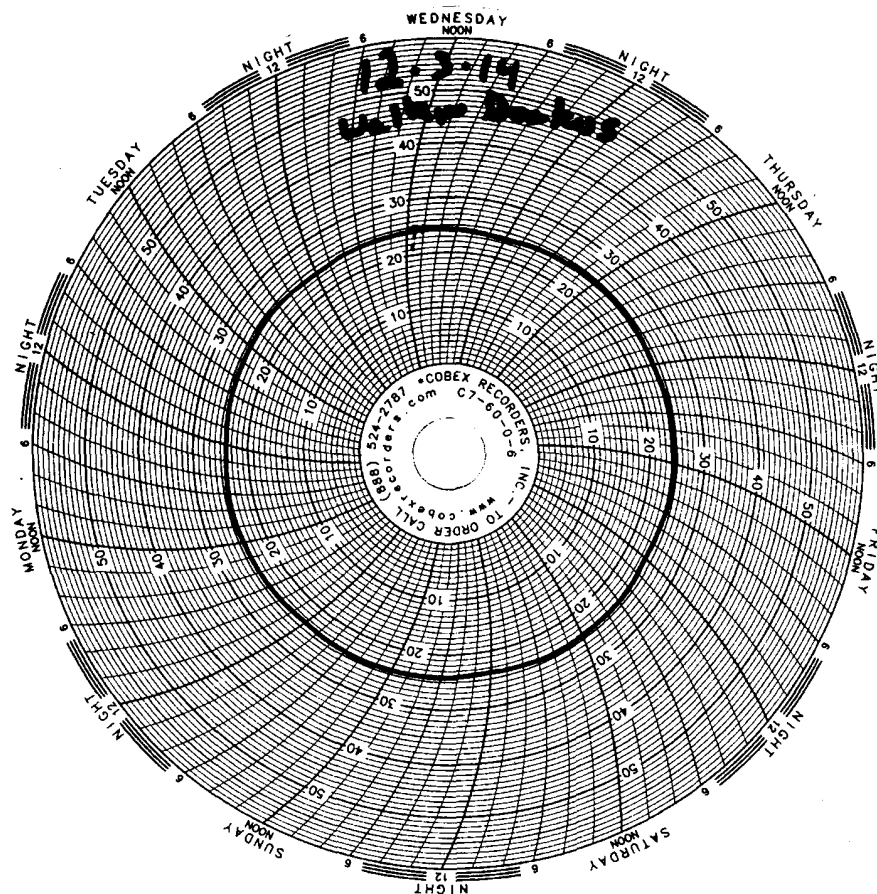


Test Temperature Chart

Test No: RT-141203

Date Tested: 12/03/14 to 12/10/14

Acceptable Range: 25 +/- 1°C



H4L240407 Analytical Report..... 1
Sample Receipt Documentation 16

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 440-97209-1

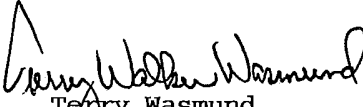
Boeing SSFL NPDES Routine

Lot #: H4L240407

Debby Wilson

TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817

TESTAMERICA LABORATORIES, INC.


Terry Wasmund
Project Manager

January 19, 2015

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ANALYTICAL METHODS SUMMARY

H4L240407

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>
Dioxins/Furans, HRGC/HRMS	EPA-5 1613B

References :

EPA-5 "Method 1613: Tetra- through Octa- Chlorinated Dioxins and Furans by Isotope Dilution, HRGC/HRMS, Revision B", EPA, OCTOBER 1994

SAMPLE SUMMARY

H4L240407

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
M5T1H	001	OUTFALL002_20141218_COMP	12/18/14	01:16

NOTE(S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

PROJECT NARRATIVE H4L240407

The results reported herein are applicable to the samples submitted for analysis only. If you have any questions about this report, please call (865) 291-3000 to speak with the TestAmerica project manager listed on the cover page.

This report shall not be reproduced except in full, without the written approval of the laboratory.

The original chain of custody documentation is included with this report.

Sample Receipt

Custody seals were not present.

Quality Control and Data Interpretation

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

Comments:

Several Estimated Detection Limits (EDL's) for the total homolog groups were changed to the lowest EDL from each group. This was done per request of the client.

The following flags are used to qualify results for chlorinated dioxin and furan results:

J – The reported result is an estimate. The amount reported is below the Minimum Level (ML). The qualitative definition of the ML is “the lowest level at which the analytical system must give a reliable signal and an acceptable calibration point”. The ML was introduced in EPA Methods 1624 and 1625 in 1980 and was promulgated in these methods in 1984 at 40 CFR Part 136, Appendix A. For the purposes of this report, the ML is qualitatively defined as described above, and quantitatively defined as follows:

Minimum Level: The concentration or mass of analyte in the sample that corresponds to the lowest calibration level in the initial calibration. It represents a concentration (in the sample extract) equivalent to that of the lowest calibration standard, after corrections for method-specified sample weights, volumes and cleanup procedures has been employed.

Example: The lowest calibration level for TCDD in the initial calibration is 0.5 pg/uL. A mass of 10 pg of 2,3,7,8-TCDD in the sample would result in a concentration of 0.5 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample extract corresponds to the concentration in the lowest calibration standard, the 10 pg mass in the sample components is the ML. If the sample extract is further diluted, the ML will increase by the dilution factor.

Example: A 1/10 dilution is performed on the sample extract described above. The ML for 2,3,7,8-TCDD becomes 100 pg rather than the default of 10 pg.

PROJECT NARRATIVE H4L240407

E – The reported result is an estimate. The amount reported is above the Upper Calibration Level (UCL) described below. The quantitative definition of the UCL is listed below:

Upper Calibration Level: The concentration or mass of analyte in the sample that corresponds to the highest calibration level in the initial calibration. It is equivalent to the concentration of the highest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed.

Example: The maximum calibration level for TCDD in the initial calibration is 200 pg/uL. A mass of 4000 pg of 2,3,7,8-TCDD in the sampling components would result in a concentration of 200 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample extract corresponds to the concentration in the highest calibration standard, the 4000 pg mass in the sample components is the UCL. If the sample extract is further diluted, the ML will increase by the dilution factor.

Example: A 1/10 dilution is performed on the sample extract described above. The UCL for 2,3,7,8-TCDD becomes 40,000 pg rather than the default of 4000 pg. In this example, all positive 2,3,7,8-TCDD results above 40,000 pg are flagged with an E.

B – The analyte is present in the associated method blank at a detectable level. For this analysis, there is no method specified reporting level other than the qualitative criterion that peaks must exhibit a signal-to-noise ratio of ≥ 2.5 to 1. Therefore, the presence of any reportable amount of the analyte in the blank will result in a B qualifier on all associated samples.

Q – Estimated maximum possible concentration. This qualifier is used when the result is generated from chromatographic data that does not meet all the qualitative criteria for a positive identification given in the method. These may include one or more of the following:

- Ion abundance ratios must be within specified limits (+/-15% of theoretical ion abundance ratio).
- Retention time criteria (relative to the method-specified isotope labeled retention time standard).
- Co-maximization criterion. The two quantitation ion peaks must reach their maxima within 2 seconds of each other.
- 2,3,7,8-TCDF result is reported from the non-isomer specific Rtx-5 column.
- Polychlorinated dibenzofuran purity. An interference may be present on the indicated polychlorinated dibenzofuran when a polychlorinated diphenyl ether peak is present and maximizes within +/- 3 seconds of the dibenzofuran candidate.

S – Ion suppression evident. The trace indicating the signal from the lock mass of the calibration compound shows a deflection at the retention time of the analyte. This may indicate a temporary suppression of the instrument sensitivity due to a matrix-borne interference.

C – Coeluting Isomer. The isomer is known to coelute with another member of its homologue group, or the peak shape is shouldered, indicating the likelihood of a coeluting isomer.

PROJECT NARRATIVE H4L240407

X – Other. See explanation in narrative.

Laboratory studies supporting risk assessment and Total Maximum Daily Load (TMDL) evaluations, frequently use qualified data reported as low as the Method Detection Limit (MDL), or the Estimated Detection Limit (EDL). Several of EPA's isotope dilution methods employ the EDL.^{1,2,3} The EDL is based on a direct measurement of the signal-to-noise (S/N) ratio acquired during sample analysis. This S/N measurement is used to calculate the concentration in the sample corresponding to the minimum intensity of the smallest quantifiable peak. The EDL reflects the amount of the particular analyte which would be required to cause a positive result for the particular analysis. Because the S/N obtained covaries with recovery, instrument sensitivity and sample-specific cleanup efficacy, the EDL is a more valid measure of the sensitivity of the entire analytical process for the specific sample than is an MDL run periodically on a reference matrix.

The EDL is typically calculated according to the following equation:

$$\text{Estimated Detection Limit} = \frac{N \times 2.5 \times Q_{is}}{H_{is} \times RRF \times W \times S}$$

Where:

- N = peak to peak noise of quantitation ion signal in the region of the ion chromatogram where the compound of interest is expected to elute
- H_{is} = peak height of quantitation ion for appropriate internal standard
- Q_{is} = ng of internal standard added to sample
- RRF = mean relative response factor of compound obtained during initial calibration
- W = amount of sample extracted (grams or liters)
- S = percent solids (optional, if results are requested to be reported on dry weight basis)

(The area of the internal standard is sometimes used instead of height, along with an area-to-height conversion factor.)

This method of estimating the detection limit differs from the MDL in that it does not carry the requirement that the sample be statistically distinguished as being from a contaminated population. As results approach the EDL, the risk of false positives and the analytical uncertainty increase significantly. However, a low false positive well below the ML or MDL is often closer to the true value than an assumption that the target analyte is present at the detection or reporting limits. For relatively clean samples, MDL studies may give an elevated estimate of the detection limit. Additionally, on contaminated samples, the MDL may give a falsely low estimate of the detection limit.

$$\text{Analyte Concentration} = \frac{A_s \times Q_{is}}{A_{is} \times RRF \times W \times S}$$

Where:

- A_s = Sum of areas of the target peaks

PROJECT NARRATIVE H4L240407

Q _{is}	=	ng of internal standard added to sample
A _{is}	=	Sum of areas of the internal standard peaks
RRF	=	mean relative response factor of compound obtained during initial calibration
W	=	amount of sample extracted (grams or liters)
S	=	percent solids (optional, if results are requested to be reported on dry weight basis)

In sample data, peaks must have an intensity of ≥ 2.5 times the height of the background noise in order to be considered. Careful examination of the two equations above reveals that for the concentration of the smallest peak detectable (per the EDL equation) to exactly equal the smallest peaks that are calculated, requires that the average height to area ratio obtained during the calibration must equal the area to height ratio for every peak obtained near 2.5 times the noise. When the area to height ratio on a peak in a sample is less than the average obtained during calibration, the calculated result will correspond to a peak that would have been less than 2.5 times the noise on the calibration. This is the result of normal variability. Because the source methods for the EDL (SW-846 8290 and 8280A) do not provide for censoring of results by any other magnitude standard than being 2.5 times the noise, the laboratory does not censor at the calculated EDL. Hence, detections may be reported below the estimated detection limits.

Footnotes:

1. Code of Federal Regulations, Part 136, Chapter 1, Appendix 1, October 1994: Method 1613 Tetra- Through Octa-Chlorinated Dioxins and Furans by Isotope Dilution High Resolution Gas Chromatography/High Resolution Mass Spectrometry.
2. U.S. EPA. Test Methods for Evaluating Solid Waste, Volume II, SW-846, Update III, December 1996. Method 8280A: The Analysis of Polychlorinated Dibenzop-Dioxins and Polychlorinated Dibenzofurans by High Resolution Gas Chromatography/Low Resolution Mass Spectrometry.
3. U.S. EPA. Test Methods for Evaluating Solid Waste, SW-846. Third Edition. March 1995 Method 8290: Polychlorinated Dibenzop-Dioxins and Polychlorinated Dibenzofurans by High Resolution Gas Chromatography/High Resolution Mass Spectrometry.

CERTIFICATION SUMMARY

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Knoxville	L-A-B	DoD ELAP		L2311
TestAmerica Knoxville	Arkansas DEQ	State Program	6	88-0688
TestAmerica Knoxville	California	State Program	9	2423
TestAmerica Knoxville	Colorado	State Program	8	N/A
TestAmerica Knoxville	Connecticut	State Program	1	PH-0223
TestAmerica Knoxville	Florida	NELAC	4	E87177
TestAmerica Knoxville	Georgia	State Program	4	906
TestAmerica Knoxville	Hawaii	State Program	9	N/A
TestAmerica Knoxville	Indiana	State Program	5	C-TN-02
TestAmerica Knoxville	Iowa	State Program	7	375
TestAmerica Knoxville	Kansas	NELAC	7	E-10349
TestAmerica Knoxville	Kentucky	State Program	4	90101
TestAmerica Knoxville	Louisiana DOHH	State Program	6	LA110001
TestAmerica Knoxville	Louisiana DEQ	NELAC	6	83979
TestAmerica Knoxville	Maryland	State Program	3	277
TestAmerica Knoxville	Michigan	State Program	5	9933
TestAmerica Knoxville	Minnesota	NELAC	5	047-999-429
TestAmerica Knoxville	Nevada	State Program	9	TN00009
TestAmerica Knoxville	New Jersey	NELAC	2	TN001
TestAmerica Knoxville	New York	NELAC	2	10781
TestAmerica Knoxville	North Carolina DENR	State Program	4	64
TestAmerica Knoxville	North Carolina DHHS	State Program	4	21705
TestAmerica Knoxville	Ohio	OVAP	5	CL0059
TestAmerica Knoxville	Oklahoma	State Program	6	9415
TestAmerica Knoxville	Pennsylvania	NELAC	3	68-00576
TestAmerica Knoxville	South Carolina	State Program	4	84001
TestAmerica Knoxville	Tennessee	State Program	4	2014
TestAmerica Knoxville	Texas	NELAC	6	T104704380-TX
TestAmerica Knoxville	Federal	USDA		P330-11-00035
TestAmerica Knoxville	Utah	NELAC	8	QUAN3
TestAmerica Knoxville	Virginia	NELAC	3	460176
TestAmerica Knoxville	Virginia	State Program	3	165
TestAmerica Knoxville	Washington	State Program	10	C593
TestAmerica Knoxville	West Virginia DEP	State Program	3	345
TestAmerica Knoxville	West Virginia DHHR	State Program	3	9955C

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Sample Data Summary

TestAmerica Irvine
Sample ID: OUTFALL002_20141218_COMP
Trace Level Organic Compounds

Lot - Sample #....: H4L240407 - 001	Work Order #....: MST1H1AA	Matrix....: WATER
Date Sampled....: 12/18/14	Date Received....: 12/24/14	Dilution Factor: 1
Prep Date....: 12/30/14	Analysis Date....: 01/15/15	
Prep Batch #: 4364015		
Initial Wgt/Vol : 963 mL	Instrument ID....: M2A	Method: EPA-5 1613B
Analyst ID....: Patricia(Trish) M. Parsly		

PARAMETER	RESULT	MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND	0.0000104	0.00000362	ug/L
Total TCDD	ND	0.0000104	0.00000362	ug/L
1,2,3,7,8-PeCDD	ND	0.0000519	0.00000169	ug/L
Total PeCDD	ND	0.0000519	0.00000169	ug/L
1,2,3,4,7,8-HxCDD	ND	0.0000519	0.00000143	ug/L
1,2,3,6,7,8-HxCDD	ND	0.0000519	0.00000145	ug/L
1,2,3,7,8,9-HxCDD	ND	0.0000519	0.00000134	ug/L
Total HxCDD	ND	0.0000519	0.00000134	ug/L
1,2,3,4,6,7,8-HpCDD	ND	0.0000519	0.00000198	ug/L
Total HpCDD	ND	0.0000519	0.00000198	ug/L
OCDD	0.00000438	Q B J	0.00000223	ug/L
2,3,7,8-TCDF	ND	0.0000104	0.00000250	ug/L
Total TCDF	ND	0.0000104	0.00000250	ug/L
1,2,3,7,8-PeCDF	ND	0.0000519	0.00000128	ug/L
2,3,4,7,8-PeCDF	ND	0.0000519	0.00000128	ug/L
Total PeCDF	ND	0.0000519	0.00000128	ug/L
1,2,3,4,7,8-HxCDF	ND	0.0000519	0.000000900	ug/L
1,2,3,6,7,8-HxCDF	ND	0.0000519	0.000000850	ug/L
2,3,4,6,7,8-HxCDF	ND	0.0000519	0.000000850	ug/L
1,2,3,7,8,9-HxCDF	ND	0.0000519	0.00000106	ug/L
Total HxCDF	ND	0.0000519	0.000000850	ug/L
1,2,3,4,6,7,8-HpCDF	ND	0.0000519	0.00000121	ug/L
1,2,3,4,7,8,9-HpCDF	ND	0.0000519	0.00000185	ug/L
Total HpCDF	ND	0.0000519	0.00000121	ug/L
OCDF	ND	0.000104	0.00000186	ug/L

TestAmerica Irvine
Sample ID: OUTFALL002_20141218_COMP
Trace Level Organic Compounds

Lot - Sample #....:	H4L240407 - 001	Work Order #....:	M5T1H1AA	Matrix....:	WATER
Date Sampled....:	12/18/14	Date Received....:	12/24/14	Dilution Factor:	1
Prep Date....:	12/30/14	Analysis Date....:	01/15/15		
Prep Batch #:	4364015				
Initial Wgt/Vol :	963 mL	Instrument ID....:	M2A	Method:	EPA-5 1613B
Analyst ID....:	Patricia(Trish) M. Parsly				

<u>INTERNAL STANDARDS</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
13C-2,3,7,8-TCDD	78	25 - 164
13C-1,2,3,7,8-PeCDD	85	25 - 181
13C-1,2,3,4,7,8-HxCDD	82	32 - 141
13C-1,2,3,6,7,8-HxCDD	91	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	87	23 - 140
13C-OCDD	85	17 - 157
13C-2,3,7,8-TCDF	73	24 - 169
13C-1,2,3,7,8-PeCDF	79	24 - 185
13C-2,3,4,7,8-PeCDF	70	21 - 178
13C-1,2,3,4,7,8-HxCDF	72	26 - 152
13C-1,2,3,6,7,8-HxCDF	77	26 - 123
13C-2,3,4,6,7,8-HxCDF	80	28 - 136
13C-1,2,3,7,8,9-HxCDF	81	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	88	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	81	26 - 138
13C-OCDF	73	17 - 157

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
37Cl4-2,3,7,8-TCDD	92	35 - 197

QUALIFIERS

- B Method blank contamination. The associated method blank contains the target analyte at a reportable level.
- J Estimated Result.
- Q Estimated maximum possible concentration (EMPC).

Method Blank Report
Trace Level Organic Compounds

Lot - Sample #....: H4L300000 - 015B Work Order #....: M5T6F1AA Matrix....: WATER
 Dilution Factor: 1
 Prep Date....: 12/30/14 Analysis Date....: 01/15/15
 Prep Batch #: 4364015
 Initial Wgt/Vol : 1000 mL Instrument ID....: M2A Method: EPA-5 1613B
 Analyst ID....: Patricia(Trish) M. Parsly

PARAMETER	RESULT	MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND	0.0000100	0.00000222	ug/L
Total TCDD	ND	0.0000100	0.00000222	ug/L
1,2,3,7,8-PeCDD	ND	0.0000500	0.00000105	ug/L
Total PeCDD	ND	0.0000500	0.00000105	ug/L
1,2,3,4,7,8-HxCDD	ND	0.0000500	0.000000850	ug/L
1,2,3,6,7,8-HxCDD	ND	0.0000500	0.000000890	ug/L
1,2,3,7,8,9-HxCDD	ND	0.0000500	0.000000810	ug/L
Total HxCDD	ND	0.0000500	0.000000810	ug/L
1,2,3,4,6,7,8-HpCDD	ND	0.0000500	0.00000113	ug/L
Total HpCDD	ND	0.0000500	0.00000113	ug/L
OCDD	0.00000202 Q J	0.000100	0.000000970	ug/L
2,3,7,8-TCDF	ND	0.0000100	0.00000144	ug/L
Total TCDF	ND	0.0000100	0.00000144	ug/L
1,2,3,7,8-PeCDF	ND	0.0000500	0.000000820	ug/L
2,3,4,7,8-PeCDF	ND	0.0000500	0.000000710	ug/L
Total PeCDF	ND	0.0000500	0.000000710	ug/L
1,2,3,4,7,8-HxCDF	ND	0.0000500	0.000000500	ug/L
1,2,3,6,7,8-HxCDF	ND	0.0000500	0.000000490	ug/L
2,3,4,6,7,8-HxCDF	ND	0.0000500	0.000000500	ug/L
1,2,3,7,8,9-HxCDF	ND	0.0000500	0.000000600	ug/L
Total HxCDF	ND	0.0000500	0.000000490	ug/L
1,2,3,4,6,7,8-HpCDF	ND	0.0000500	0.000000680	ug/L
1,2,3,4,7,8,9-HpCDF	ND	0.0000500	0.000000960	ug/L
Total HpCDF	ND	0.0000500	0.000000680	ug/L
OCDF	ND	0.000100	0.00000103	ug/L

Method Blank Report
Trace Level Organic Compounds

Lot - Sample #....: H4L300000 - 015B Work Order #....: M5T6F1AA Matrix....: WATER
 Dilution Factor: 1
 Prep Date....: 12/30/14 Analysis Date....: 01/15/15
 Prep Batch #: 4364015
 Initial Wgt/Vol : 1000 mL Instrument ID....: M2A Method: EPA-5 1613B
 Analyst ID....: Patricia(Trish) M. Parsly

<u>INTERNAL STANDARDS</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
13C-2,3,7,8-TCDD	83	25 - 164
13C-1,2,3,7,8-PeCDD	89	25 - 181
13C-1,2,3,4,7,8-HxCDD	86	32 - 141
13C-1,2,3,6,7,8-HxCDD	94	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	91	23 - 140
13C-OCDD	89	17 - 157
13C-2,3,7,8-TCDF	84	24 - 169
13C-1,2,3,7,8-PeCDF	83	24 - 185
13C-2,3,4,7,8-PeCDF	79	21 - 178
13C-1,2,3,4,7,8-HxCDF	77	26 - 152
13C-1,2,3,6,7,8-HxCDF	79	26 - 123
13C-2,3,4,6,7,8-HxCDF	86	28 - 136
13C-1,2,3,7,8,9-HxCDF	89	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	84	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	87	26 - 138
13C-OCDF	81	17 - 157

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
37Cl4-2,3,7,8-TCDD	94	35 - 197

QUALIFIERS

- J Estimated Result.
 Q Estimated maximum possible concentration (EMPC).

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot # ...: H4L240407 Work Order # ...: M5T6F1AC-LCS Matrix: WATER
 LCS Lot-Sample# : H4L300000 - 015
 Prep Date: 12/30/14 Analysis Date ..: 01/15/15
 Prep Batch # ...: 4364015
 Dilution Factor : 1
 Analyst ID.....: Kathryn B. Lay Instrument ID.: M2A Method.....: EPA-5 1613B
 Initial Wgt/Vol: 1000 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RECOVERY LIMITS
2,3,7,8-TCDD	0.0002	0.0001	ug/L	98	(67 - 158)
1,2,3,7,8-PeCDD	0.0010	0.0009	ug/L	99	(70 - 142)
1,2,3,4,7,8-HxCDD	0.0010	0.0009	ug/L	97	(70 - 164)
1,2,3,6,7,8-HxCDD	0.0010	0.0009	ug/L	94	(76 - 134)
1,2,3,7,8,9-HxCDD	0.0010	0.0009	ug/L	94	(64 - 162)
1,2,3,4,6,7,8-HpCDD	0.0010	0.0009	ug/L	92	(70 - 140)
OCDD	0.0020	0.0017	ug/L	90 B	(78 - 144)
2,3,7,8-TCDF	0.0002	0.0002	ug/L	108	(75 - 158)
1,2,3,7,8-PeCDF	0.0010	0.0009	ug/L	95	(80 - 134)
2,3,4,7,8-PeCDF	0.0010	0.0009	ug/L	99	(68 - 160)
1,2,3,4,7,8-HxCDF	0.0010	0.0009	ug/L	98	(72 - 134)
1,2,3,6,7,8-HxCDF	0.0010	0.0009	ug/L	99	(84 - 130)
2,3,4,6,7,8-HxCDF	0.0010	0.0009	ug/L	99	(70 - 156)
1,2,3,7,8,9-HxCDF	0.0010	0.0009	ug/L	98	(78 - 130)
1,2,3,4,6,7,8-HpCDF	0.0010	0.0009	ug/L	93	(82 - 122)
1,2,3,4,7,8,9-HpCDF	0.0010	0.0009	ug/L	96	(78 - 138)
OCDF	0.0020	0.0017	ug/L	89	(63 - 170)

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	79	(20 - 175)
13C-1,2,3,7,8-PeCDD	85	(21 - 227)
13C-1,2,3,4,7,8-HxCDD	82	(21 - 193)
13C-1,2,3,6,7,8-HxCDD	90	(25 - 163)
13C-1,2,3,4,6,7,8-HpCDD	87	(26 - 166)
13C-OCDD	65	(13 - 199)
13C-2,3,7,8-TCDF	71	(22 - 152)
13C-1,2,3,7,8-PeCDF	80	(21 - 192)
13C-2,3,4,7,8-PeCDF	76	(13 - 328)
13C-1,2,3,4,7,8-HxCDF	77	(19 - 202)
13C-1,2,3,6,7,8-HxCDF	84	(21 - 159)
13C-2,3,4,6,7,8-HxCDF	80	(22 - 176)
13C-1,2,3,7,8,9-HxCDF	67	(17 - 205)
13C-1,2,3,4,6,7,8-HpCDF	74	(21 - 158)
13C-1,2,3,4,7,8,9-HpCDF	58	(20 - 186)
13C-OCDF	49	(13 - 199)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	82	(31 - 191)

LABORATORY CONTROL SAMPLE DATA REPORT**Trace Level Organic Compounds****Notes:**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Sample Receipt Documentation

TestAmerica Irvine
 17461 Denian Ave Suite 100
 Irvine, CA 92614-5817
 Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

HL 210107



THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab) Client Contact: Wilson, Debby S Shipping/Receiving: debby.wilson@testamericainc.com Company: TestAmerica Laboratories, Inc.		Lab PM: Wilson, Debby S E-Mail: debby.wilson@testamericainc.com		Carrier Tracking No(s): 440-71628-1 Page: Page 1 of 1 Job #: 440-97209-1		COC No: 440-71628-1	
Address: 5815 Middlebrook Pike, City: Knoxville State, Zip: TN, 37921 Phone: 865-291-3000 (Tel) 865-584-4315 (Fax) Email:		Due Date Requested: 1/6/2015 TAT Requested (days):		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 Other:	
Project Name: Boeing SSFL NPDES Routine Outfall 002 Site:		PO #: WO #: Project #: 44009879 SSOV#:		Field Filtered Sample (Yes or No)		Total Number of Containers	
Sample Identification - Client ID (Lab ID) Outfall002_20141218_Comp (440-97209-1)		Sample Date: 12/18/14 Sample Time: 01:16 Pacific Sample Type (C=Comp, G=Grab): Matrix (W=water, S=solid, O=wastefl, BT=tissue, A=air): Preservation Code: Water		Perform MS/MSD (Yes or No)		Special Instructions/Note: See QAS, Boeing_w/1 to zero. ug/L	
Possible Hazard Identification Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify)		Date: 12/18/14 17:00 Received by: <i>Yun Bank</i> Company: TAT		Date: 12/23/14 17:00 Received by: <i>Felix</i> Company:		Date: 12/24/14 1100 Received by: <i>Lynn Henry</i> Company:	
Empty Kit Relinquished by:		Date:		Method of Shipment:		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Relinquished by:		Date:		Relinquished by:		Date:	
Relinquished by:		Date:		Relinquished by:		Date:	
Relinquished by:		Date:		Relinquished by:		Date:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Δ Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		Special Instructions/QC Requirements:	



TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Lot Number: 44124047

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Do sample container labels match COC? (IDs, Dates, Times)	<input checked="" type="checkbox"/>			<input type="checkbox"/> 1a Do not match COC <input type="checkbox"/> 1b Incomplete information <input type="checkbox"/> 1c Marking smeared <input type="checkbox"/> 1d Label torn <input type="checkbox"/> 1e No label <input type="checkbox"/> 1f COC not received <input type="checkbox"/> 1g Other:	<u>4a</u>
2. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : <u>SC57</u> Correction factor: <u>-0.1</u>	<input checked="" type="checkbox"/>			<input type="checkbox"/> 2a Temp Blank = _____ <input type="checkbox"/> 2b Cooler Temp = _____ <input type="checkbox"/> 2c Cooling initiated for recently collected samples, ice present. <input type="checkbox"/> 3a See box 3A for pH Preservation <input type="checkbox"/> 3b Other:	
3. Were samples received with correct chemical preservative (excluding Encore)?	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> 4a Not present <input type="checkbox"/> 4b Not intact <input type="checkbox"/> 4c Other:	
4. Were custody seals present/intact on cooler and/or containers?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/> 5a Samples received-not on COC <input type="checkbox"/> 5b Samples not received-on COC <input type="checkbox"/> 6a Leaking <input type="checkbox"/> 6b Broken <input type="checkbox"/> 7a Headspace (VOA only) <input type="checkbox"/> 8a Improper container	
5. Were all of the samples listed on the COC received?	<input checked="" type="checkbox"/>			<input type="checkbox"/> 9a Could not be determined due to matrix interference <input type="checkbox"/> 10a Holding time expired <input type="checkbox"/> Incomplete information	
6. Were all of the sample containers received intact?	<input checked="" type="checkbox"/>			If no, was pH adjusted to pH 7 - 9 with sulfuric acid? _____	
7. Were VOA samples received without headspace?	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/> 13a Leaking <input type="checkbox"/> 13b Other:	
8. Were samples received in appropriate containers?	<input checked="" type="checkbox"/>			<input type="checkbox"/> 14a Not relinquished <input type="checkbox"/> 15a Incomplete information	
9. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number: <u>4252 2017/07</u>	<input checked="" type="checkbox"/>			<input type="checkbox"/> 15a Incomplete information <input type="checkbox"/> 15a Incomplete information	
10. Were samples received within holding time?	<input checked="" type="checkbox"/>			<input type="checkbox"/> 15a Incomplete information <input type="checkbox"/> 15a Incomplete information	
11. For rad samples, was sample activity info. provided?	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/> 15a Incomplete information <input type="checkbox"/> 19a Other	
12. For 1613B water samples is pH<9?	<input checked="" type="checkbox"/>				pH test strip lot number: <u>HC425511</u>
13. Are the shipping containers intact?	<input checked="" type="checkbox"/>				Box 3A: pH Preservation Box 9A: Residual Chlorine
14. Was COC relinquished? (Signed/Dated/Timed)	<input checked="" type="checkbox"/>				Preservative: _____
15. Are tests/parameters listed for each sample?	<input checked="" type="checkbox"/>				Lot Number: _____
16. Is the matrix of the samples noted?	<input checked="" type="checkbox"/>				Exp Date: _____
17. Is the date/time of sample collection noted?	<input checked="" type="checkbox"/>				Analyst: _____
18. Is the client and project name/# identified?	<input checked="" type="checkbox"/>				Date: _____
19. Was the sampler identified on the COC?	<input checked="" type="checkbox"/>				Time: _____

Quote #: 90493 PM Instructions: _____

Sample Receiving Associate: Ryan Henry Date: 12/24/14



TestAmerica Irvine
 17461 Darian Ave Suite 100
 Irvine, CA 92614-5817
 Phone (949) 261-1022 Fax (949) 260-3297

611401901
 Chain of Custody Record



TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)			Sample		
Client Contact:	EMSL Analytical, Inc.		Lab P#:	Wilson, Debby S.	
Shipping/Receiving Company:	EMSL Analytical, Inc.		F-Mail:	debby.wilson@testamericainc.com	
Address:	200 Rt 130 North,		Carrier Tracking No(s)		
City:	Cinnaminson		COC No.:	440-70971-1	
State, Zip:	NJ 08077		Page:	Page 1 of 1	
Phone:	800-220-3675(Tel)		Job #:	440-97227-1	
Email:			Preservation Codes:	A-HCl B-NaOH C-Zn Acetate D-Ni/NaAcid E-NH4SO4 F-MeOH G-Arctic H-Ascorbic Acid I-Lactone J-LDI Water K-EDTA L-EDTA Other:	
Project Name:	Boeing SSFL NPDES Routine Outfall 002		Project #:	44009879	
Site:	SSCOW#		W/O #:		
Due Date Requested:	12/31/2014		Total Number of containers:	1	
TAT Requested (days):	7		Special Instructions/Note:	Use EMSL COC	
Sample Identification - Client ID (Lab ID)	Outfall002_20141217_Grab (440-97227-1)		Field Filtered Sample (Yes or No)	<input checked="" type="checkbox"/>	
Sample Date	12/17/14		Perform MS/MSD (Yes or No)	<input checked="" type="checkbox"/>	
Sample Time	08:02 Pacific		SUB (DNA-human bacteriodes; EMSL/ DNA-human bacteriodes; EMSL)	X	
Sample Type	G-Grab		Matrix	Water	
Matrix	(Specify Sample, Preservative, Add)		Special Instructions/Note:		
Preservation Code:	Water		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Active For _____ Months	
Possible Hazard Identification	UNCONFIRMED CINNAMINSON NJ DEC 23 A 11:00				
Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify)					
Empty Kit/Refrigerated by:	Date:	Time:	Method of Shipment:		
Refrigerated by:	Date/Time:	Time:	Received by:	Date/Time:	Company:
Refrigerated by:	12/22/14	17:00	Received by:	12/23/14	10:45
Company:	Company:	Company:	Company:	Company:	Company:
Custody Seal In tact:	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks			
A Yes	A No	O.I.C			

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 9040 Friars Road Suite 220 San Diego, CA 92108-5860		Project: Boeing-SSFL NPDES Routine Outfall 002 COMPOSITE	
Test America Contact: Debby Wilson		Phone Number: 619.285.7132, 858.337.4061 (cell) Field Manager: Jeff Bannon 818.350.7340, 818.414.5608 (cell)	
Project Manager: Nancy Gardiner D. BANNON S. DAWSON		Sampling Date/Time: 12.18.14 / 0110	
Sample Description Outfall 002	Sample Matrix W	Container Type 1L Poly	Bottle # 8A
Outfall 002	W	1L Amber	7A, 7B
Outfall 002	W	1L Poly	8
Outfall 002	W	500 mL Poly	9A, 9B
Outfall 002	W	500 mL Poly	10A, 10B
Outfall 002	W	500 mL Poly	11
Outfall 002	W	500 mL Poly	12A, 12B
Outfall 002	W	500 mL Poly	13
Outfall 002	W	1L Amber	14A, 14B
Outfall 002	W	1L Amber	15A, 15B
Outfall 002	W	1L Poly	12B
Sample ID: Outfall002_2014_12_18_14_Comp		Preservative: HNO ₃ None None None None None None H ₂ SO ₄ None None None	
ANALYSIS REQUIRED Total Recoverable Metals: Cu, Pb, Hg, Cd, Se, Zn, Fe TCDD (and all congeners) BOD ₅ (20 degrees C) Surfactants (MBAS) Cr, SO ₄ , NO ₃ +NO ₂ -N, Perchlorate Nitrate-N, Nitrite-N Turbidity, TDS TSS Ammonia-N (350 Z) Alpha BHC (608) 2,4,6 TCP, 2,4 Dinitrofluorene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs 625)			
Comments: 440-97209 Chain of Custody			

12/18/14
20:32



COC Page 2 of 3 and Page 3 of 3 are the composite samples for Outfall 002 for this storm event. These must be added to the same work order for COC Page 1 of 3 for Outfall 002 for the same event.

Requisitioned By: ANITA RICE 12/18/14 0940	Date/Time: 12/18/14 0940	Received By: SHANTIA NORTON 12/18/14	Date/Time: 12/18/14	Turnaround time (Check) 24 Hour: <input type="checkbox"/> 72 Hour: <input type="checkbox"/> 5 Day: <input type="checkbox"/> 10 Day: <input checked="" type="checkbox"/>
Requisitioned By: SHANTIA NORTON 12/18/14 1720	Date/Time: 12/18/14 1720	Received By: J. BANNER 12/18/14 1720	Date/Time: 12/18/14 1720	Sample Integrity (Check) Ch. Int. <input type="checkbox"/>
Requisitioned By: SHANTIA NORTON 12/18/14 1720	Date/Time: 12/18/14 1720	Received By: J. BANNER 12/18/14 1720	Date/Time: 12/18/14 1720	Data Requirements (Check) No Level IV: <input type="checkbox"/> All Level IV: <input type="checkbox"/> NPDES Level IV: <input type="checkbox"/>

UTC Station 002 JAK

IR-64

2.9/2.1
3.2/2.4
9.8/3.0



CHAIN OF CUSTODY FORM

2
Comp_2 of 3

Client Name/Address: Haley & Aldrich 9040 Friars Road Suite 220 San Diego, CA 92108-5860		Project: Boeing-SSFL NPDES Routine Outfall 002 COMPOSITE		ANALYSIS REQUIRED	
Test America Contact: Debby Wilson		Phone Number: 619.285.7132, 858.337.4061 (cell) Field Manager: Jeff Bannon 818.350.7340, 818.414.5608 (cell)		Comments	
Project Manager: Nancy Gardiner Sampler: B BENSON S DAVISON		Sample I.D. Outfall002_20141218_Comp		Chronic Toxicity	
Sample Description Outfall 002	Container Type 1L Poly	# of Cont. 1	Sampling Date/Time 12-18-14 0114	Preservative None	Bottle # 19
Outfall 002	25 Gal Cube	1	Total Dissolved Metals: Cu, Pb, Hg, Cd, Se, Zn, Fe Gross Alpha(9000), Gross Beta(9000), Tritium (T-3) (906.0), Sr-90 (905.0), Total Combined Radium 226 (903.0 or 903.1) & Radium 228 (904.0), Uranium (908.0), K-40, CS-137 (901.0 or 901.1)	None	17A
Outfall 002	500 mL Amber	1		None	17B
Outfall 002	1 Gal Cube	1		None	18
Outfall 002	500 mL Poly	1		NaOH	19
Filter with 24hrs of receipt at lab Unfiltered and unpreserved analysis Only test if first or second rain events of the year					
COC Page 2 of 3 and Page 3 of 3 are the composite samples for Outfall 002 for this storm event. These must be added to the same work order for COC Page 1 of 3 for Outfall 002 for the same event.					
Relinquished By ANITA 12.18.14 0114	Date/Time 12-18-14 17:20	Received By SHAFIQ NABI	Date/Time 12/18/14	Round time (Check) 24 Hour: <input type="checkbox"/> 72 Hour: <input type="checkbox"/> 10 Day: <input type="checkbox"/> 28 Hour: <input checked="" type="checkbox"/> 5 Day: <input type="checkbox"/> Normal: <input type="checkbox"/>	2.9/2.1 3.2/2.4 3.8/3.0
Relinquished By SHAFIQ NABI	Date/Time 12-18-14 17:20	Received By VUBANDI	Date/Time 12/18/14 17:20	Sample Integrity (Check) intact: <input type="checkbox"/> On Ice: <input type="checkbox"/>	IR-64
Relinquished By	Date/Time	Received By	Date/Time	Data Requirements (Check) No Level IV: <input type="checkbox"/> All Level IV: <input type="checkbox"/> NPDES Level IV: <input type="checkbox"/>	

VTC SHAFIQ NABI



CHAIN OF CUSTODY FORM

Client Name/Address:			Project:			ANALYSIS REQUIRED				Comments							
Haley & Aldrich 9040 Friars Road Suite 220 San Diego, CA 92108-5860			Boeing-SSFL NPDES Routine Outfall 002 COMPOSITE			Total Recoverable Metals: Cu, Pb, Hg, Cd	TCDD (and all congeners)	BOD ₅ (20 degrees C)	Surfactants (MBAS)		Cr, SO ₄ , NO ₂ -N, Peroxide	Nitrate-N, Nitrite-N	Turbidity, TDS	TSS	Ammonia-N (350 Z)	Alpha BHC (609)	2,4,6 TCP, 2,4 Dinitrofluorene, BzZ, ethylenephthalate, NDMA, PCP (SVOCs 625)
Sample Description	Sample Matrix	Container Type	# of Cans	Sample I.D.	Preservative	Bottle #	Sampling Date/Time	Phone Number:	Field Manager: Jeff Bannion 818.350.7340, 818.414.5608 (cell)								
Outfall 002	W	1L Poly	1		HNO ₃	6A	X										
Outfall 002	W	1L Amber	2		None	7A, 7B											
Outfall 002	W	1L Poly	1		None	8											
Outfall 002	W	500 mL Poly	2		None	9A, 9B											
Outfall 002	W	500 mL Poly	2		None	10A, 10B											
Outfall 002	W	500 mL Poly	1		None	11											
Outfall 002	W	500 mL Poly	1		None	12A, 12B											
Outfall 002	W	500 mL Poly	1		H ₂ SO ₄	13											
Outfall 002	W	1L Amber	2		None	14A, 14B									X		
Outfall 002	W	1L Amber	2		None	15A, 15B										X	
Outfall 002	W	1L Poly	1		None	16											
COC Page 2 of 3 and Page 3 of 3 are the composite samples for Outfall 002 for this storm event.																	
Relinquished By ANTREA RICE Date/Time: 12/18/14 09:40					Received By Shah & NABT Date/Time: 12/18/14					Relinquished By Shah & NABT Date/Time: 12/18/14 17:20		Received By Sun Bana Date/Time: 12/18/14 17:00					
Date/Time: _____ 10 Day: _____ Normal: <input checked="" type="checkbox"/> Date/Time: _____ 72 Hour: _____ 5 Day: _____																	
Date/Time: _____																	

VTC Shah & NABT
JR-64

Client Name/Address: Haley & Aldrich
9040 Friars Road Suite 220
San Diego, CA 92108-5860

Project: Boeing-SSFL NPDES
Route: Outfall 002
GRAB

Phone Number: 619.285.7132, 858.337.4061 (cell)
Field Manager: Jeff Barron
818.350.7340, 818.414.5608 (cell)

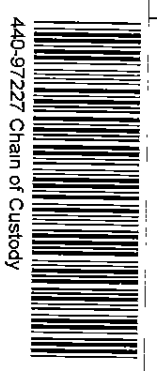
Test America Contact: Debby Wilson

Sample Description	Container Type	# of Cans	Sample I.D.	Sampling Date/Time	Preservative	Bottle #	ANALYSIS REQUIRED	Field Readings	Meter serial #
Outfall 002	VOAs	5			HCl	1A, 1B, 1C, 1D, 1E	1,1-DCE, 1,2-DCA, TCE (624)	DO 4.90 mg/L	0800
Outfall 002	1L Amber	2		12-17-14 / 0802	HCl	2A, 2B	Oil & Grease (1664-HEM)	pH 7.11 pH unit	UNHYAADC
Outfall 002	1L Poly	1			None	3	Settleable Solids	Temp 9.76 °F	
Outfall 002	500 mL Poly	2			None	4A, 4B	Conductivity	TRC = 0.0 mg/L (091290C15825)	S/N #
Tip Blanks	VOAs	3			HCl	5A, 5B, 5C	Fecal Coliform (SM9221)		
Outfall 2	105 mL Poly	1	Outfall 002_2014_1217_1612		None		E. Coli (SM9221)		
Outfall 2	125 mL Poly	1	"		None		MST		
Outfall 2	125 mL Poly	1	"		None				
Outfall 2	125 mL Poly	1	"		None				

Field Readings (Include units):
DO 4.90 mg/L
pH 7.11 pH unit
Temp 9.76 °F
TRC = 0.0 mg/L (091290C15825)

Checked by: ANITA RICE JWR
Date/Time: 12-17-14 / 0400

Comments: UNHYAADC



Requested By	Date/Time	Received By	Date/Time	Turn-around time (Check)	Sample Integrity (Check)	Data Requirements (Check)
ANITA RICE	12-17-14 / 1030	SHARON RICE	12-17-14 / 1018	24 Hour ___ 72 Hour ___ 10 Day <input checked="" type="checkbox"/>	Intact ___ On low ___	No Level IV ___ All Level IV ___ NPDES Level IV ___
SHARON RICE	12-17-14 / 1330	MARK D	12-17-14 / 1330			

1.3/0.5 735

UTC SHARON RICE JWR

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 440-97209-1

Login Number: 97209

List Number: 1

Creator: Blocker, Kristina M

List Source: TestAmerica Irvine

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.	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: 440-97209-1

Login Number: 97209

List Number: 2

Creator: Clarke, Jill C

List Source: TestAmerica St. Louis

List Creation: 12/20/14 11:52 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.	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	6.4
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	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	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").	N/A	
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: 440-97209-1

Login Number: 97227

List Number: 1

Creator: Blocker, Kristina M

List Source: TestAmerica Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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.	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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	
440-97209-1	Outfall002_20141218_Comp	87.9	
440-97209-2	Trip Blank	90.9	
480-73271-AA-5-A DU	Duplicate	89.4	
LCS 160-164776/2-A	Lab Control Sample	94.7	
MB 160-164776/1-A	Method Blank	89.7	
Tracer/Carrier Legend			
Ba = Ba Carrier			

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
440-97209-1	Outfall002_20141218_Comp	87.9	87.1
440-97209-2	Trip Blank	90.9	87.1
480-73271-AA-5-B DU	Duplicate	89.4	86.4
LCS 160-164779/2-A	Lab Control Sample	94.7	84.1
MB 160-164779/1-A	Method Blank	89.7	88.6
Tracer/Carrier Legend			
Ba = Ba Carrier			
Y = Y Carrier			

Method: 905 - Strontium-90 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Sr (C) (40-110)	Y (40-110)
440-96594-A-2-G DU	Duplicate	88.2	90.8
440-97209-1	Outfall002_20141218_Comp	80.5	92.3
440-97209-2	Trip Blank	85.2	93.5
LCS 160-165620/2-A	Lab Control Sample	88.6	92.7
MB 160-165620/1-A	Method Blank	90.0	89.3
Tracer/Carrier Legend			
Sr (C) = Sr Carrier			
Y = Y Carrier			

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	U-232 (30-110)	
440-97211-A-2-D DU	Duplicate	31.1	
LCS 160-165361/2-A	Lab Control Sample	83.7	
MB 160-165361/1-A	Method Blank	87.1	

TestAmerica Irvine

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.

Project/Site: Boeing SSFL NPDES Routine Outfall 002

TestAmerica Job ID: 440-97209-1

Tracer/Carrier Legend

U-232 = Uranium-232

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DATA VALIDATION REPORT

Haley & Aldrich Boeing SSFL Stormwater

SAMPLE DELIVERY GROUP: 440-96457-1

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title: Haley & Aldrich Boeing SSFL Stormwater
 Contract Task Order: 1272.003H.01 001
 Sample Delivery Group: 440-96457-1
 Project Manager: K. Miller
 Matrix: Water
 QC Level: IV
 No. of Samples: 3
 No. of Reanalyses/Dilutions: 0
 Laboratory: TestAmerica Irvine

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix</i>	<i>Collection</i>	<i>Method</i>
Outfall008_2014 1212	440-96606-1	N/A	Water	12/12/2014 3:17:00 PM	600/R-93/116, E1613B, E200.7, E200.8, E245.1, E300, E300-28DAY, E314.0, E525.2, E608, E625, E900, E901.1, E905.0, E906, SM2540C/D, SM4500-CN-E, SM4500F-C, SM4500-NH3G
Outfall008_2014 1212_Grab	440-96479-1, 440-96457-1	N/A	Water	12/12/2014 8:55:00 AM	E1664, E218.6, E624, SM9221E, SM9221F
TRIP BLANK_201412 12-01	440-96479-2	N/A	Water	12/12/2014 8:55:00 AM	E624

II. Sample Management

Sample receipt temperatures were within the control limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The samples in this SDG were received at the laboratories on ice. Although the COC indicated the sample for the 525.2 analysis was preserved, the laboratory's receipt information and preparation benchsheet indicated the sample was not properly preserved. The pH was adjusted from 7 to <2 at the laboratory prior to extraction. Unpreserved aliquots were provided for the Method 624 analysis of target compounds 2-chloroethyl vinyl ether, acrolein, and acrylonitrile, as the preservative causes degradation of those compounds. According to the case narrative for this SDG, the sample containers were received intact and remaining samples were properly preserved. No documentation was provided for the ID change. No COC transferring the samples to TestAmerica-St. Louis was provided. The COCs were appropriately signed and dated by field and laboratory personnel. The samples were transferred to TestAmerica-Irvine by courier. Custody seals were intact at the remaining laboratories.

The VOC trip blank sample was listed on the COC as TB-2014. According to D. Wilson of TestAmerica-Irvine, Haley & Aldrich gave the laboratory instructions to include the year, month, and date of sample collection in the trip blank ID. No revised COC or formal request to change this particular ID was received by the laboratory.

Upon receipt at TestAmerica-Irvine, the laboratory prepared the radionuclide samples and a blank that accompanied the samples to TestAmerica-St. Louis.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+	Not applicable	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample, and may have a potential positive bias.
J-	Not applicable	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample, and may have a potential negative bias.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.

Qualifier	Organics	Inorganics
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
L1	LCS/LCSD RPD was outside control limits.	LSC/LSCD RPD was outside control limits.
Q	MS/MSD recovery was poor.	MS recovery was poor.
Q1	MS/MSD RPD was outside control limits.	MS/MSD RPD was outside control limits.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	ICPMS tune was not compliant.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

Qualifier	Organics	Inorganics
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The reported result is above the method detection limit but is less than the reporting limit.	The reported result is above the method detection limit but is less than the reporting limit.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

III. Method Analyses

A. EPA METHOD 600/R-93/116—Asbestos

Reviewed By: P. Meeks

Date Reviewed: January 23, 2015

The sample listed in Table 1 for this analysis were validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for General Minerals (DVP-6, Rev. 0)*, *EPA Method 600/R-93/116*, and the *National Functional Guidelines for Inorganic Data Review (2014)*.

- Holding Times: The sample was received and filtered by the laboratory within 48-hours of collection.
- Calibration: Not applicable to this analysis.
- Blanks: Method blanks are not applicable to this analysis.
- Blank Spikes and Laboratory Control Samples: Not applicable to this analysis.
- Laboratory Duplicates: No laboratory duplicate analysis were performed.
- Matrix Spike/Matrix Spike Duplicate: Not applicable to this analysis.
- Sample Result Verification: An EPA Level IV review was performed for the samples in this data package. The sample results reported on the sample result forms were verified against the raw data and no transcription errors were noted.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: The field blank and equipment rinsate associated with the samples in this SDG were not analyzed for asbestos.
 - Field Duplicates: There were no field duplicate samples identified in this SDG.

B. EPA METHOD 1613B—Dioxin/Furans

Reviewed By: L. Calvin

Date Reviewed: January 16, 2015

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0)*, *USEPA Method 1613B*, and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review (2011)*.

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted and analyzed within one year of collection.
- Instrument Performance: Instrument performance criteria were met. Following are findings associated with instrument performance.
 - 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 reported as less than 25%.
 - Mass Spectrometer Performance: The mass spectrometer performance was acceptable with the static resolving power greater than 10,000.
- Calibration: Calibration criteria were met.
 - Initial Calibration: Initial calibration criteria were met. The initial calibration was acceptable with %RSDs $\leq 20\%$ for the 15 native compounds (calibration by isotope dilution) and $\leq 35\%$ for the two native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613B control limits for all standards.
 - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of the analytical sequence. The VER was acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613B. The ion abundance ratios and relative retention times were within the method control limits.
- Blanks: The method blank had a detect below the reporting limit for OCDD at 0.0000276 $\mu\text{g/L}$. The sample result for OCDD was qualified as nondetected, "U," at the level of contamination. The method blank had no other detects above the estimated detection limit (EDL).
- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613B.

- **Field QC Samples:** Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - **Field Blanks and Equipment Rinsates:** This SDG had no identified field blank or equipment rinsate samples.
 - **Field Duplicates:** This SDG had no identified field duplicate samples.
- **Internal Standards Performance:** The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613B.
- **Compound Identification:** Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613B. Isomer 2,3,7,8-TCDF was not detected in the initial analysis of the sample; therefore, confirmation analysis was not necessary.
- **Compound Quantification and Reported Detection Limits:** Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike concentrations. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J." Any detects between the EDL and the reporting limit (RL) were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Nondetects are valid to the EDL.

The results for 1,2,3,4,6,7,8-HpCDD and OCDF reported as EMPCs were qualified as estimated nondetects, "UJ," at the level of the EMPC. Totals HpCDD and HxCDF containing one or more EMPC peaks were qualified as estimated, "J."

C. EPA METHOD 200.7, 200.8 and 245.1—Metals

Reviewed By: M. Cherny

Date Reviewed: January 19, 2015

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0)*, *EPA Method 200.7, 200.8, 245.1*, and the *National Functional Guidelines for Inorganic Data Review (2014)*.

- **Holding Times:** The analytical holding time, six months, was met.
- **Calibration:** The initial and continuing calibration recoveries were within 90-110% and the CRI recoveries were within the control limits of 70-130%.

- Blanks: Method blanks and CCBs had no detects.
- Interference Check Samples: Recoveries were within 80-120%. Total recoverable and dissolved selenium were detected in the ICSA at -1.04 µg/L and -.848 µg/L; therefore, nondetected selenium in the site sample was qualified as estimated, “UJ”. There were no other detects in the ICSA above the certified impurity levels.
- Blank Spikes and Laboratory Control Samples: Recoveries were within the method control limits of 85-115% and the ICP MS RPDs were ≤20%.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG for the dissolved analytes. The recoveries were within method control limits of 70-130% and the RPDs were within the laboratory control limit of ≤20%.
- Serial Dilution: No serial dilution analyses were performed.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either “J+” or “J-”; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

D. EPA METHOD 314.0—Perchlorate

Reviewed By: M. Cherny

Date Reviewed: January 19, 2015

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0)*, *EPA Method 314.0* and the *National Functional Guidelines for Inorganic Data Review (2014)*.

- Holding Times: The analytical holding time, 28 days, was met.
- Calibration: The ICV and CCV recoveries were within the control limits of 90-110%. The MRL recoveries were within the control limits of 75-125%.
- Blanks: The method blank and CCBs had no detects affecting sample results.
- Interference Check Samples: Recoveries were within 80-120%.
- Blank Spikes and Laboratory Control Samples: The recovery was within the method control limits of 85-115%.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were not performed on the sample in this SDG. Method accuracy was evaluated based upon laboratory spike results.
- Serial Dilution: No serial dilution analyses were performed on the sample in this SDG.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either “J+” or “J-,” otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

- Field Duplicates: There were no field duplicate samples identified for this SDG.

E. EPA METHOD 608 (Low Level)—Pesticides and PCBs

Reviewed By: L. Calvin

Date Reviewed: January 16, 2015

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^x Data Validation Procedure for Organochlorine Pesticides/PCBs by GC (DVP-4, Rev. 0)*, *EPA Method 608*, and the *National Functional Guidelines for Organic Methods Data Review (2014)*.

- Holding Times: Extraction and analytical holding times were met. The sample was extracted within seven days of collection and analyzed within 40 days of extraction.
- Calibration: The initial calibrations had %RSDs of $\leq 10\%$ or r^2 of ≥ 0.990 on both analytical columns. The ICVs and CCVs bracketing the sample analyses had %Ds within the QC limit of $\leq 15\%$. As there were no primary column detects to confirm, secondary column CCVs were not assessed. The breakdown totals for endrin and 4,4'-DDT were $\leq 15\%$.
- Blanks: The method blanks had no confirmed target compounds detected.
- Blank Spikes and Laboratory Control Samples: Recoveries and RPDs were within the laboratory-established QC limits. Chlordane and toxaphene were not spiked in the pesticide LCS/LCSD.
- Surrogate Recovery: Recoveries were within the laboratory-established QC limits.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were not performed on the sample from this SDG. Evaluation of method accuracy and precision was based on the LCS/LCSD results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: This SDG had no identified field duplicate samples.

- **Compound Identification:** Compound identification was verified. Review of the sample chromatograms and retention times indicated no problems with target compound identification. The laboratory analyzed for select pesticides and PCB Aroclors by Method 608.
- **Compound Quantification and Reported Detection Limits:** Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J," and coded with "DNQ" in order to comply with the NPDES permit. Any reported nondetect is valid to the reporting limit.

F. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks

Date Reviewed: January 16, 2015

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *EPA Methods 900.0, 901.1, 903.0, 904.0, 905.0, and 906.0, HASL-300*, and the *National Functional Guidelines for Inorganic Data Review (2014)*.

- **Holding Times:** The tritium sample was analyzed within 180 days of collection. Aliquots for the remaining analytes were preserved within the five-day holding time.
- **Calibration:** The laboratory calibration information included the standard certificates and applicable preparation/dilutions logs for NIST-traceability.

The gross alpha and radium-226 detector efficiencies were less than 20%; therefore, gross alpha and radium-226 in the sample was qualified as estimated, "J," for detects and, "UJ," for nondetects. The remaining detector efficiencies were greater than 20%.

All initial and annual calibration verifications were acceptable with mean recoveries within 90-110%. All carrier recoveries were within 40-110%. The gamma spectroscopy analytes were determined at the maximum photopeak energy.

- **Blanks:** There were no analytes detected in the method blanks. Radium-228 was detected in the blank prepared by TestAmerica-Irvine, but was not detected in the site sample. There were no other detects in the blank prepared by TestAmerica-Irvine.
- **Blank Spikes and Laboratory Control Samples:** The recoveries and radium-228 relative error ratio (RER) were within laboratory-established control limits.
- **Laboratory Duplicates:** No laboratory duplicate analyses were performed on a sample in this SDG.

- Matrix Spike/Matrix Spike Duplicate: No matrix spike analyses were performed on a sample in this SDG. Method accuracy was evaluated based on LCS results.
- Sample Result Verification: An EPA Level IV review was performed for the sample in this data package. The sample results and MDCs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Reported nondetects are valid to the MDC.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

G. EPA METHOD 525.2—Semivolatile Organic Compounds (SVOCs)

Reviewed By: L. Calvin

Date Reviewed: January 16, 2015

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^x Data Validation Procedure for Semivolatile Organics (DVP-3, Rev. 0)*, *EPA Method 525.2*, and the *National Functional Guidelines for Organic Methods Data Review (2014)*.

- Holding Times: The sample was extracted 24.2 hours after collection; therefore, the nondetected result for diazinon was qualified as estimated, "UJ." As the sample was extracted within 14 days of collection, chlorpyrifos required no qualification. The sample was analyzed within 30 days of extraction.
- GC/MS Tuning: The DFTPP tunes met the method abundance criteria. The sample was analyzed within 12 hours of the DFTPP injection time.
- Calibration: Calibration criteria were met. The initial calibration average RRFs were ≥ 0.05 and %RSDs $\leq 30\%$. The continuing calibration RRFs were ≥ 0.05 and recoveries were within the method QC limits of 70-130%.
- Blanks: The method blank had no target compound detects.
- Blank Spikes and Laboratory Control Samples: The recoveries and RPDs were within laboratory-established control limits.

- **Surrogate Recovery:** The surrogate triphenylphosphate was recovered above the control limits of 70-130% at 136%; however, as the sample had no target compound detects, no qualification was necessary. Remaining recoveries were within the control limits.
- **Matrix Spike/Matrix Spike Duplicate:** MS/MSD analyses were not performed on the sample in this SDG. Method accuracy and precision were evaluated based on the LCS/LCSD results.
- **Field QC Samples:** Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - **Field Blanks and Equipment Rinsates:** This SDG had no identified field blank or equipment rinsate samples.
 - **Field Duplicates:** This SDG had no identified field duplicate samples.
- **Internal Standards Performance:** The internal standard area counts were within the method control limits established by the continuing calibration standards of $\pm 30\%$. The retention times were within ± 30 seconds.
- **Compound Identification:** Compound identification was verified. The laboratory analyzed for chlorpyrifos and diazinon by Method 525.2. Review of the sample chromatogram, retention times, and spectra indicated no problems with target compound identification.
- **Compound Quantification and Reported Detection Limits:** Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Reported nondetects are valid to the reporting limit.
- **Tentatively Identified Compounds:** TICs were not reported by the laboratory for this analysis.
- **System Performance:** Review of the raw data indicated no problems with system performance.

H. EPA METHOD 625—Semivolatile Organic Compounds (SVOCs)

Reviewed By: L. Calvin

Date Reviewed: January 16, 2015

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Semivolatile Organics (DVP-3, Rev. 0)*, *EPA Method 625*, and the *National Functional Guidelines for Organic Methods Data Review (2014)*.

- Holding Times: Extraction and analytical holding times were met. The unpreserved water sample was extracted within seven days of collection and analyzed within 40 days of extraction.
- GC/MS Tuning: The DFTPP met the method ion abundance criteria. The sample was analyzed within 12 hours of the DFTPP injection time.
- Calibration: Initial calibration average RRFs were ≥ 0.05 . The initial calibration %RSDs were $\leq 35\%$ or r^2 values ≥ 0.990 . ICV and CCV RRFs were ≥ 0.05 . The following ICV %Ds exceeded 20%: 4,6-dinitro-2-methylphenol (26.1%), benzidine (33.8%), and benzo(g,h,i)perylene (21.9%). Sample results for the %D outliers, all nondetects, were qualified as estimated, "UJ." Remaining ICV and all CCV %Ds were within the control limit of $\leq 20\%$.
- Blanks: The method blank had no target compound detects above the MDL.
- Blank Spikes and Laboratory Control Samples: Dimethyl phthalate was recovered above the control limits of 10-85% in both the LCS and LCSD, at 88% and 87%, respectively. Dimethyl phthalate was not detected in the associated sample; therefore, no qualification was necessary. Remaining recoveries and all RPDs were within laboratory-established control limits.
- Surrogate Recovery: Surrogate recoveries were within laboratory-established control limits.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were not performed on the sample from this SDG. Evaluation of method accuracy and precision was based on LCS/LCSD results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: This SDG had no identified field duplicate samples.
- Internal Standards Performance: The internal standard area counts and retention times were within the control limits of $-50\%/+100\%$ for internal standard areas and ± 30 seconds for retention times established by the continuing calibration standards.
- Compound Identification: Compound identification was verified. The laboratory analyzed semivolatiles target compounds by Method 625. Review of the sample chromatogram, retention times, and spectra indicated no problems with target compound identification.

- **Compound Quantification and Reported Detection Limits:** Compound quantification was verified. The sample required no dilution. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the reporting limit.
- **Tentatively Identified Compounds:** TICs were not reported by the laboratory for this SDG.
- **System Performance:** Review of the raw data indicated no problems with system performance.

I. EPA METHODS 624—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin

Date Reviewed: January 16, 2015

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method 624*, and the *National Functional Guidelines for Organic Methods Data Review (2014)*.

- **Holding Times:** Analytical holding times were met. The unpreserved aliquots of the water samples were analyzed within seven days of collection and the preserved aliquots were analyzed within 14 days of collection.
- **GC/MS Tuning:** The BFB tunes met the method abundance criteria. The samples were analyzed within 12 hours of the BFB injection time.
- **Calibration:** Calibration criteria were met. The initial calibration average RRFs and the ICV and continuing calibration RRFs were ≥ 0.05 for all applicable target compounds. The initial calibration %RSDs were $\leq 35\%$, or r^2 values ≥ 0.990 . The second source ICV and all applicable CCV recoveries were within the method control limits.
- **Blanks:** The method blanks had no target compound detects.
- **Blank Spikes and Laboratory Control Samples:** Recoveries were within laboratory-established QC limits.
- **Surrogate Recovery:** Recoveries were within laboratory-established QC limits.
- **Matrix Spike/Matrix Spike Duplicate:** MS/MSD analyses were not performed on the site sample of this SDG. Method accuracy and precision were evaluated based on LCS/LCSD results.
- **Field QC Samples:** Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC

data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

- Trip Blanks: Sample TB-20141212 was the trip blank associated with the site sample in this SDG. The trip blank had no target compounds detected above the MDL.
- Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
- Field Duplicates: This SDG had no identified field duplicate samples.
- Internal Standards Performance: The internal standard retention times and area counts were within the control limits established by the continuing calibration standards: ± 30 seconds for retention times and $-50\%/+100\%$ for internal standard areas.
- Compound Identification: Compound identification was verified. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J," and coded with "DNQ" in order to comply with the NPDES permit. Reported nondetects are valid to the reporting limit.
- Tentatively Identified Compounds: TICs were not reported by the laboratory for this SDG.
- System Performance: Review of the raw data indicated no problems with system performance.

J. Various Methods—General Chemistry

Reviewed By: P. Meeks

Date Reviewed: January 16, 2015

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^x Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0)*, *EPA Methods 218.6, 300.0, and 1664A, Standard Method for the Examination of Water and Wastewater Methods, 2540C, 2540D, 4500CN E, 4500F C, 4500 NH3 G, 9221E, and 9221F*, and the *National Functional Guidelines for Inorganic Data Review (2014)*.

- Holding Times: The analytical holding times, as listed below were met.
 - Hexane extractable material (HEM) Oil and Grease –

- Hexavalent chromium – 24 hours
- Nitrate and nitrite – 48 hours
- Chloride, sulfate, fluoride, ammonia – 28 days
- TDS/TSS - 7 days
- Cyanide – 14 days

The e. coli and fecal coliform analytical holding times are listed as immediate. As the sample was prepared on the day they were collected, no qualifications were required.

- Calibration: Initial and continuing calibration recoveries were within the control limits of 90-110% for the applicable methods. The hexavalent chromium method reporting limit standard recovery was within the reasonable control limits of 70-130%.
- Blanks: The method blanks and CCBs had no detects.
- Blank Spikes and Laboratory Control Samples: The recoveries were within the laboratory control limits. The cyanide and HEM RPDs were within the laboratory control limits.
- Laboratory Duplicates: Laboratory duplicate analysis was performed on the sample in this SDG for TDS. The RPD was within the laboratory control limit.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG for hexavalent chromium. The recoveries and RPD were within the control limits of 90-110% and $\leq 10\%$, respectively. Accuracy for the remaining methods was evaluated based on the LCS results
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either “J+” or “J-,” otherwise, bias was not indicated in the qualification. Nitrate was reported from a 5x dilution in order to report the analytes within the linear range of the calibration. Any detects between the method detection limit and the reporting limit were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms: 440964571

Analysis Method *E1613B*

Sample Name Outfall_008_20141212 **Matrix Type:** WM **Result Type:** TRG

Sample Date: 12/12/2014 3:17:00 PM **Validation Level:** 3

Lab Sample Name: 440-96606-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	N	39001-02-0	0.00000296	0.0000950	0.0	ug/L	QJ	UJ	*III
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	N	3268-87-9	0.0000678	0.0000950	0.0	ug/L	BJ	U	B
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	N	67562-39-4	0.00000244	0.0000475	0.0	ug/L	J	J	DNQ
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	N	35822-46-9	0.00000609	0.0000475	0.0	ug/L	QJ	UJ	*III
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	N	55673-89-7		0.0000475	0.0	ug/L	U	U	
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	N	70648-26-9		0.0000475	0.0	ug/L	U	U	
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	N	39227-28-6		0.0000475	0.0	ug/L	U	U	
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	N	57117-44-9		0.0000475	0.0	ug/L	U	U	
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	N	57653-85-7		0.0000475	0.0	ug/L	U	U	
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	N	72918-21-9		0.0000475	0.0	ug/L	U	U	
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	N	19408-74-3		0.0000475	0.0	ug/L	U	U	
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	N	57117-41-6		0.0000475	0.0	ug/L	U	U	
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	N	40321-76-4		0.0000475	0.0	ug/L	U	U	
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	N	60851-34-5		0.0000475	0.0	ug/L	U	U	
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	N	57117-31-4		0.0000475	0.0	ug/L	U	U	
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	N	51207-31-9		0.0000094	0.0	ug/L	U	U	
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	N	1746-01-6		0.0000094	0.0	ug/L	U	U	
37Cl4-2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	N	85508-50-5		0	0	ug/L			
Total Heptachlorodibenzofuran (HpCDF)	N	38998-75-3	0.00000244	0.0000475	0.0	ug/L	J	J	DNQ
Total Heptachlorodibenzo-p-dioxin (HpCDD)	N	37871-00-4	0.0000139	0.0000475	0.0	ug/L	QJ	J	DNQ, *III
Total Hexachlorodibenzofuran (HxCDF)	N	55684-94-1	0.00000173	0.0000475	0.0	ug/L	QJ	J	DNQ, *III

Analysis Method E1613B

Total Hexachlorodibenzo-p-dioxin (HxCDD)	N	34465-46-8	0.0000475	0.0	ug/L	U	U
Total Pentachlorodibenzofuran (PeCDF)	N	30402-15-4	0.0000475	0.0	ug/L	U	U
Total Pentachlorodibenzo-p-dioxin (PeCDD)	N	36088-22-9	0.0000475	0.0	ug/L	U	U
Total Tetrachlorodibenzofuran (TCDF)	N	55722-27-5	0.0000094	0.0	ug/L	U	U
Total Tetrachlorodibenzo-p-dioxin (TCDD)	N	41903-57-5	0.0000094	0.0	ug/L	U	U

Analysis Method E1664

Sample Name Outfall008_20141212_Gra **Matrix Type:** WM **Result Type:** TRG
Sample Date: 12/12/2014 8:55:00 AM **Validation Level:** 3

Lab Sample Name: 440-96479-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Oil and Grease	N	OILGREASE	4.9	1.4	mg/L	U	U		

Analysis Method E200.7

Sample Name Outfall_008_20141212 **Matrix Type:** WM **Result Type:** TRG
Sample Date: 12/12/2014 3:17:00 PM **Validation Level:** 3

Lab Sample Name: 440-96606-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	D	7429-90-5	190	50	25	ug/L	QP		
Aluminum	N	7429-90-5	3100	50	25	ug/L			
Arsenic	N	7440-38-2		10	5.0	ug/L	U	U	
Arsenic	D	7440-38-2		10	5.0	ug/L	UQP	U	
Beryllium	N	7440-41-7		2.0	1.0	ug/L	U	U	
Beryllium	D	7440-41-7		2.0	1.0	ug/L	UQP	U	
Boron	D	7440-42-8	0.095	0.050	0.010	mg/L	QP		
Boron	N	7440-42-8	0.095	0.050	0.010	mg/L			
Chromium	D	7440-47-3		5.0	2.5	ug/L	UQP	U	
Chromium	N	7440-47-3	3.8	5.0	2.5	ug/L	J,DX	J	DNQ
Hardness as CaCO3	D	HARDNESSCA#8 CO3		0.33	0.17	mg/L	QP		
Hardness as CaCO3	N	HARDNESSCA#55 CO3		0.33	0.17	mg/L			
Iron	D	7439-89-6	0.16	0.040	0.010	mg/L	QP		
Iron	N	7439-89-6	3.0	0.040	0.010	mg/L	MB		
Nickel	D	7440-02-0		10	5.0	ug/L	UQP	U	
Nickel	N	7440-02-0		10	5.0	ug/L	U	U	
Silver	N	7440-22-4		10	5.0	ug/L	U	U	
Silver	D	7440-22-4		10	5.0	ug/L	UQP	U	

Analysis Method E200.7

Vanadium	N	7440-62-2	6.6	10	5.0	ug/L	J,DX	J	DNQ
Vanadium	D	7440-62-2		10	5.0	ug/L	UQP	U	
Zinc	N	7440-66-6	31	20	10	ug/L			
Zinc	D	7440-66-6	12	20	10	ug/L	QP		

Analysis Method E200.8**Sample Name** Outfall_008_20141212 **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/12/2014 3:17:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96606-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	N	7440-36-0		2.0	0.50	ug/L	U	U	
Antimony	D	7440-36-0		2.0	0.50	ug/L	UQP	U	
Cadmium	D	7440-43-9		1.0	0.25	ug/L	UQP	U	
Cadmium	N	7440-43-9		1.0	0.25	ug/L	U	U	
Copper	D	7440-50-8	3.2	2.0	0.50	ug/L	QP		
Copper	N	7440-50-8	5.2	2.0	0.50	ug/L			
Lead	N	7439-92-1	2.0	1.0	0.50	ug/L			
Lead	D	7439-92-1		1.0	0.50	ug/L	UQP	U	
Selenium	N	7782-49-2		2.0	0.50	ug/L	U	UJ	I
Selenium	D	7782-49-2		2.0	0.50	ug/L	UQP	UJ	I
Thallium	D	7440-28-0		1.0	0.50	ug/L	UQP	U	
Thallium	N	7440-28-0		1.0	0.50	ug/L	U	U	

Analysis Method E218.6**Sample Name** Outfall008_20141212_Gra **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/12/2014 8:55:00 AM **Validation Level:** 3**Lab Sample Name:** 440-96479-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Chromium VI (Hexavalent)	N	18540-29-9		1.0	0.25	ug/L	U	U	

Analysis Method E245.1**Sample Name** Outfall_008_20141212 **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/12/2014 3:17:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96606-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	N	7439-97-6		0.20	0.10	ug/L	U	U	
Mercury	D	7439-97-6		0.20	0.10	ug/L	ULQIB	U	

Analysis Method E300**Sample Name** Outfall_008_20141212 **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/12/2014 3:17:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96606-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Nitrate (as N)	N	14797-55-8	4.3	0.55	0.28	mg/L			
Nitrite (as N)	N	14797-65-0		0.15	0.070	mg/L	U	U	
Nitrite/Nitrate	N	NO2NO3	4.3	0.55	0.28	mg/L			

Analysis Method E300-28DAY**Sample Name** Outfall_008_20141212 **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/12/2014 3:17:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96606-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Chloride	N	16887-00-6	4.9	0.50	0.25	mg/L			
Sulfate	N	14808-79-8	4.3	0.50	0.25	mg/L			

Analysis Method E314.0**Sample Name** Outfall_008_20141212 **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/12/2014 3:17:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96606-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	N	14797-73-0	2.5	4.0	0.95	ug/L	J,DX	J	DNQ

Analysis Method E525.2**Sample Name** Outfall_008_20141212 **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/12/2014 3:17:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96606-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Chlorpyrifos	N	2921-88-2		0.96	0.48	ug/L	U	U	
Diazinon	N	333-41-5		0.24	0.12	ug/L	U	UJ	H

Analysis Method E608**Sample Name** Outfall_008_20141212 **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/12/2014 3:17:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96606-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
4,4'-DDD	N	72-54-8	0.0048	0.0038	ug/L	U	U		
4,4'-DDE	N	72-55-9	0.0048	0.0029	ug/L	U	U		
4,4'-DDT	N	50-29-3	0.0095	0.0038	ug/L	U	U		
Aldrin	N	309-00-2	0.0048	0.0014	ug/L	U	U		
alpha-BHC	N	319-84-6	0.0048	0.0024	ug/L	U	U		
Aroclor-1016 (PCB-1016)	N	12674-11-2	0.48	0.24	ug/L	U	U		
Aroclor-1221 (PCB-1221)	N	11104-28-2	0.48	0.24	ug/L	U	U		
Aroclor-1232 (PCB-1232)	N	11141-16-5	0.48	0.24	ug/L	U	U		
Aroclor-1242 (PCB-1242)	N	53469-21-9	0.48	0.24	ug/L	U	U		
Aroclor-1248 (PCB-1248)	N	12672-29-6	0.48	0.24	ug/L	U	U		
Aroclor-1254 (PCB-1254)	N	11097-69-1	0.48	0.24	ug/L	U	U		
Aroclor-1260 (PCB-1260)	N	11096-82-5	0.48	0.24	ug/L	U	U		
beta-BHC	N	319-85-7	0.0095	0.0038	ug/L	U	U		
Chlordane	N	57-74-9	0.095	0.076	ug/L	U	U		
delta-BHC	N	319-86-8	0.0048	0.0033	ug/L	U	U		
Dieldrin	N	60-57-1	0.0048	0.0019	ug/L	U	U		
Endosulfan I	N	959-98-8	0.0048	0.0029	ug/L	U	U		
Endosulfan II	N	33213-65-9	0.0048	0.0019	ug/L	U	U		
Endosulfan sulfate	N	1031-07-8	0.0095	0.0029	ug/L	U	U		
Endrin	N	72-20-8	0.0048	0.0019	ug/L	U	U		
Endrin aldehyde	N	7421-93-4	0.0095	0.0019	ug/L	U	U		
gamma-BHC (Lindane)	N	58-89-9	0.0095	0.0029	ug/L	U	U		
Heptachlor	N	76-44-8	0.0095	0.0029	ug/L	U	U		
Heptachlor epoxide	N	1024-57-3	0.0048	0.0024	ug/L	U	U		
Toxaphene	N	8001-35-2	0.48	0.24	ug/L	U	U		

Analysis Method E624**Sample Name** Outfall008_20141212_Gra **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/12/2014 8:55:00 AM **Validation Level:** 3**Lab Sample Name:** 440-96479-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1-Trichloroethane	N	71-55-6	0.50	0.25	ug/L	U	U		
1,1,2,2-Tetrachloroethane	N	79-34-5	0.50	0.25	ug/L	U	U		
1,1,2-Trichloroethane	N	79-00-5	0.50	0.25	ug/L	U	U		
1,1-Dichloroethane	N	75-34-3	0.50	0.25	ug/L	U	U		

Analysis Method *E624*

1,1-Dichloroethene	N	75-35-4	0.50	0.25	ug/L	U	U
1,2-Dichloroethane	N	107-06-2	0.50	0.25	ug/L	U	U
1,2-Dichloropropane	N	78-87-5	0.50	0.25	ug/L	U	U
2-Chloroethyl vinyl ether	N	110-75-8	2.0	1.0	ug/L	U	U
Acrolein	N	107-02-8	5.0	2.5	ug/L	U	U
Acrylonitrile	N	107-13-1	2.0	1.0	ug/L	U	U
Benzene	N	71-43-2	0.50	0.25	ug/L	U	U
Bromodichloromethane	N	75-27-4	0.50	0.25	ug/L	U	U
Bromoform	N	75-25-2	1.0	0.40	ug/L	U	U
Bromomethane (Methyl Bromide)	N	74-83-9	0.50	0.25	ug/L	U	U
Carbon tetrachloride	N	56-23-5	0.50	0.25	ug/L	U	U
Chlorobenzene	N	108-90-7	0.50	0.25	ug/L	U	U
Chloroethane	N	75-00-3	1.0	0.40	ug/L	U	U
Chloroform (Trichloromethane)	N	67-66-3	0.50	0.25	ug/L	U	U
Chloromethane (Methyl Chloride)	N	74-87-3	0.50	0.25	ug/L	U	U
cis-1,2-Dichloroethene	N	156-59-2	0.50	0.25	ug/L	U	U
cis-1,3-Dichloropropene	N	10061-01-5	0.50	0.25	ug/L	U	U
Dibromochloromethane	N	124-48-1	0.50	0.25	ug/L	U	U
Ethylbenzene	N	100-41-4	0.50	0.25	ug/L	U	U
Methylene chloride	N	75-09-2	2.0	0.88	ug/L	U	U
Tetrachloroethene	N	127-18-4	0.50	0.25	ug/L	U	U
Toluene	N	108-88-3	0.50	0.25	ug/L	U	U
trans-1,2-Dichloroethene	N	156-60-5	0.50	0.25	ug/L	U	U
trans-1,3-Dichloropropene	N	10061-02-6	0.50	0.25	ug/L	U	U
Trichloroethene	N	79-01-6	0.50	0.25	ug/L	U	U
Vinyl chloride	N	75-01-4	0.50	0.25	ug/L	U	U
Xylene (total)	N	1330-20-7	1.0	0.50	ug/L	U	U

Sample Name TB-20141212 **Matrix Type:** WM **Result Type:** TRG

Sample Date: 12/12/2014 8:55:00 AM **Validation Level:** 3

Lab Sample Name: 440-96479-2

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1-Trichloroethane	N	71-55-6	0.50	0.25	ug/L	U	U		
1,1,2,2-Tetrachloroethane	N	79-34-5	0.50	0.25	ug/L	U	U		
1,1,2-Trichloroethane	N	79-00-5	0.50	0.25	ug/L	U	U		
1,1-Dichloroethane	N	75-34-3	0.50	0.25	ug/L	U	U		
1,1-Dichloroethene	N	75-35-4	0.50	0.25	ug/L	U	U		
1,2-Dichloroethane	N	107-06-2	0.50	0.25	ug/L	U	U		
1,2-Dichloropropane	N	78-87-5	0.50	0.25	ug/L	U	U		
2-Chloroethyl vinyl ether	N	110-75-8	2.0	1.0	ug/L	U	U		
Acrolein	N	107-02-8	5.0	2.5	ug/L	U	U		
Acrylonitrile	N	107-13-1	2.0	1.0	ug/L	U	U		

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Benzene	N	71-43-2	0.50	0.25	ug/L	U	U
Bromodichloromethane	N	75-27-4	0.50	0.25	ug/L	U	U
Bromoform	N	75-25-2	1.0	0.40	ug/L	U	U
Bromomethane (Methyl Bromide)	N	74-83-9	0.50	0.25	ug/L	U	U
Carbon tetrachloride	N	56-23-5	0.50	0.25	ug/L	U	U
Chlorobenzene	N	108-90-7	0.50	0.25	ug/L	U	U
Chloroethane	N	75-00-3	1.0	0.40	ug/L	U	U
Chloroform (Trichloromethane)	N	67-66-3	0.50	0.25	ug/L	U	U
Chloromethane (Methyl Chloride)	N	74-87-3	0.50	0.25	ug/L	U	U
cis-1,2-Dichloroethene	N	156-59-2	0.50	0.25	ug/L	U	U
cis-1,3-Dichloropropene	N	10061-01-5	0.50	0.25	ug/L	U	U
Dibromochloromethane	N	124-48-1	0.50	0.25	ug/L	U	U
Ethylbenzene	N	100-41-4	0.50	0.25	ug/L	U	U
Methylene chloride	N	75-09-2	2.0	0.88	ug/L	U	U
Tetrachloroethene	N	127-18-4	0.50	0.25	ug/L	U	U
Toluene	N	108-88-3	0.50	0.25	ug/L	U	U
trans-1,2-Dichloroethene	N	156-60-5	0.50	0.25	ug/L	U	U
trans-1,3-Dichloropropene	N	10061-02-6	0.50	0.25	ug/L	U	U
Trichloroethene	N	79-01-6	0.50	0.25	ug/L	U	U
Vinyl chloride	N	75-01-4	0.50	0.25	ug/L	U	U
Xylene (total)	N	1330-20-7	1.0	0.50	ug/L	U	U

Analysis Method E625**Sample Name** Outfall_008_20141212 **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/12/2014 3:17:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96606-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,4-Trichlorobenzene	N	120-82-1	0.957	0.478	ug/L	U	U		
1,2-Dichlorobenzene	N	95-50-1	0.478	0.191	ug/L	U	U		
1,2-Diphenylhydrazine	N	122-66-7	0.957	0.478	ug/L	U	U		
1,3-Dichlorobenzene	N	541-73-1	0.478	0.191	ug/L	U	U		
1,4-Dichlorobenzene	N	106-46-7	0.478	0.191	ug/L	U	U		
2,2'-oxybis(1-Chloropropane)	N	108-60-1	0.478	0.191	ug/L	U	U		
2,4,6-Trichlorophenol	N	88-06-2	0.957	0.478	ug/L	U	U		
2,4-Dichlorophenol	N	120-83-2	1.91	0.957	ug/L	U	U		
2,4-Dimethylphenol	N	105-67-9	1.91	0.957	ug/L	U	U		
2,4-Dinitrophenol	N	51-28-5	4.78	1.91	ug/L	U	U		
2,4-Dinitrotoluene	N	121-14-2	4.78	1.91	ug/L	U	U		
2,6-Dinitrotoluene	N	606-20-2	4.78	1.91	ug/L	U	U		
2-Chloronaphthalene	N	91-58-7	0.478	0.191	ug/L	U	U		
2-Chlorophenol	N	95-57-8	0.957	0.478	ug/L	U	U		

Analysis Method E625

2-Nitrophenol	N	88-75-5	1.91	0.957	ug/L	U	U	
3,3'-Dichlorobenzidine	N	91-94-1	4.78	1.91	ug/L	U	U	
4,6-Dinitro-2-methylphenol	N	534-52-1	4.78	1.91	ug/L	U	UJ	C
4-Bromophenyl phenyl ether	N	101-55-3	0.957	0.478	ug/L	U	U	
4-Chloro-3-methylphenol	N	59-50-7	1.91	0.191	ug/L	U	U	
4-Chlorophenyl phenyl ether	N	7005-72-3	0.478	0.191	ug/L	U	U	
4-Nitrophenol	N	100-02-7	4.78	1.91	ug/L	U	U	
Acenaphthene	N	83-32-9	0.478	0.191	ug/L	U	U	
Acenaphthylene	N	208-96-8	0.478	0.191	ug/L	U	U	
Anthracene	N	120-12-7	0.478	0.191	ug/L	U	U	
Benzidine	N	92-87-5	9.57	4.78	ug/L	U	UJ	C
Benzo(a)anthracene	N	56-55-3	4.78	1.91	ug/L	U	U	
Benzo(b)fluoranthene	N	205-99-2	1.91	0.957	ug/L	U	U	
Benzo(g,h,i)perylene	N	191-24-2	4.78	1.91	ug/L	U	UJ	C
Benzo(k)fluoranthene	N	207-08-9	0.478	0.239	ug/L	U	U	
bis(2-Chloroethoxy)methane	N	111-91-1	0.478	0.191	ug/L	U	U	
bis(2-Chloroethyl)ether	N	111-44-4	0.478	0.191	ug/L	U	U	
bis(2-Ethylhexyl)phthalate	N	117-81-7	4.78	1.91	ug/L	U	U	
Butyl benzylphthalate	N	85-68-7	4.78	1.91	ug/L	U	U	
Chrysene	N	218-01-9	0.478	0.191	ug/L	U	U	
Dibenz(a,h)anthracene	N	53-70-3	0.478	0.239	ug/L	U	U	
Diethyl phthalate	N	84-66-2	0.957	0.478	ug/L	U	U	
Dimethyl phthalate	N	131-11-3	0.478	0.239	ug/L	ULQ	U	
Di-n-butylphthalate	N	84-74-2	1.91	0.957	ug/L	U	U	
Di-n-octyl phthalate	N	117-84-0	4.78	1.91	ug/L	U	U	
Fluoranthene	N	206-44-0	0.478	0.191	ug/L	U	U	
Fluorene	N	86-73-7	0.478	0.191	ug/L	U	U	
Hexachlorobenzene	N	118-74-1	0.957	0.478	ug/L	U	U	
Hexachlorobutadiene	N	87-68-3	1.91	0.478	ug/L	U	U	
Hexachlorocyclopentadiene	N	77-47-4	4.78	1.91	ug/L	U	U	
Hexachloroethane	N	67-72-1	2.87	0.478	ug/L	U	U	
Indeno(1,2,3-cd)pyrene	N	193-39-5	1.91	0.957	ug/L	U	U	
Isophorone	N	78-59-1	0.957	0.478	ug/L	U	U	
Naphthalene	N	91-20-3	0.957	0.478	ug/L	U	U	
Nitrobenzene	N	98-95-3	0.957	0.478	ug/L	U	U	
N-Nitrosodimethylamine	N	62-75-9	1.91	0.957	ug/L	U	U	
N-Nitrosodi-n-propylamine	N	621-64-7	1.91	0.957	ug/L	U	U	
N-Nitrosodiphenylamine	N	86-30-6	0.957	0.478	ug/L	U	U	
Pentachlorophenol	N	87-86-5	1.91	0.957	ug/L	U	U	
Phenanthrene	N	85-01-8	0.478	0.191	ug/L	U	U	
Phenol	N	108-95-2	0.957	0.478	ug/L	U	U	
Pyrene	N	129-00-0	0.478	0.191	ug/L	U	U	

Analysis Method E900**Sample Name** Outfall_008_20141212 **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/12/2014 3:17:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96606-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Alpha Analytes	N	GROSSALPHA3.04	3.00	1.59	pCi/L			J	C
Gross Beta Analytes	N	GROSSBETA	6.61	4.00	1.06	pCi/L			

Analysis Method E901.1**Sample Name** Outfall_008_20141212 **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/12/2014 3:17:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96606-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cesium-137	N	10045-97-3	0.000	20.0	12.4	pCi/L	U	U	
Potassium-40	N	13966-00-2	-38.0		171	pCi/L	U	U	

Analysis Method E903.0**Sample Name** Outfall_008_20141212 **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/12/2014 3:17:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96606-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	N	13982-63-3	0.0806	1.00	0.218	pCi/L	U	UJ	C

Analysis Method E904.0**Sample Name** Outfall_008_20141212 **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/12/2014 3:17:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96606-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-228	N	15262-20-1	0.316	1.00	0.636	pCi/L	U	U	

Analysis Method E905.0**Sample Name** Outfall_008_20141212 **Matrix Type:** WM **Result Type:** TRG**Sample Date:** 12/12/2014 3:17:00 PM **Validation Level:** 3**Lab Sample Name:** 440-96606-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	N	10098-97-2	-0.264	3.00	0.725	pCi/L	U	U	

Analysis Method E906.0

Sample Name Outfall_008_20141212 **Matrix Type:** WM **Result Type:** TRG

Sample Date: 12/12/2014 3:17:00 PM **Validation Level:** 3

Lab Sample Name: 440-96606-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	N	10028-17-8	99.5	500	313	pCi/L	U	U	

Analysis Method HASL-300 U Mod

Sample Name Outfall_008_20141212 **Matrix Type:** WM **Result Type:** TRG

Sample Date: 12/12/2014 3:17:00 PM **Validation Level:** 3

Lab Sample Name: 440-96606-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Uranium	N	URANIUM	0.556	1.00	0.841	pCi/L	U	U	

Analysis Method SM2540C

Sample Name Outfall_008_20141212 **Matrix Type:** WM **Result Type:** TRG

Sample Date: 12/12/2014 3:17:00 PM **Validation Level:** 3

Lab Sample Name: 440-96606-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Dissolved Solids (TDS)	N	TDS	120	10	5.0	mg/L			

Analysis Method SM2540D

Sample Name Outfall_008_20141212 **Matrix Type:** WM **Result Type:** TRG

Sample Date: 12/12/2014 3:17:00 PM **Validation Level:** 3

Lab Sample Name: 440-96606-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids (TSS)	N	TSS	27	2.5	1.3	mg/L			

Analysis Method SM4500-CN-E

Sample Name Outfall_008_20141212 **Matrix Type:** WM **Result Type:** TRG

Sample Date: 12/12/2014 3:17:00 PM **Validation Level:** 3

Lab Sample Name: 440-96606-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cyanide	N	57-12-5		5.0	2.5	ug/L	U	U	

Analysis Method SM4500F-C

Sample Name Outfall_008_20141212 **Matrix Type:** WM **Result Type:** TRG

Sample Date: 12/12/2014 3:17:00 PM **Validation Level:** 3

Lab Sample Name: 440-96606-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Fluoride	N	16984-48-8	0.15	0.10	0.050	mg/L			

Analysis Method SM4500-NH3G

Sample Name Outfall_008_20141212 **Matrix Type:** WM **Result Type:** TRG

Sample Date: 12/12/2014 3:17:00 PM **Validation Level:** 3

Lab Sample Name: 440-96606-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Ammonia	N	7664-41-7	0.140	0.200	0.100	mg/L	J,DX	J	DNQ

Analysis Method SM9221E

Sample Name Outfall008_20141212_Gra **Matrix Type:** WM **Result Type:** TRG

Sample Date: 12/12/2014 8:55:00 AM **Validation Level:** 3

Lab Sample Name: 440-96457-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Fecal Coliform Bacteria	N	COLIFORMFEC600 AL		1.8	0	mpn/100			

Analysis Method SM9221F

Sample Name Outfall008_20141212_Gra **Matrix Type:** WM **Result Type:** TRG

Sample Date: 12/12/2014 8:55:00 AM **Validation Level:** 3

Lab Sample Name: 440-96457-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Escherichia coli	N	ECOLI	1600	1.8	0	mpn/100			

ANALYSIS OF WATER FOR ASBESTOS BY TEM (EPA-600 R 94 134) EPA 100.2

LAB.NO. 163946
 CLIENT: Test America, Irvine
 DATE: 1/18/2015

Laboratory I.D.	Client I.D.	FILTER MEDIA DATA			No. of G.O.	Analyzed Area, mm ²	Sample Volume (mL)
		Type	Diameter mm	Effective Area mm ²			
163946-1	440-96606-1	MCE	47	1017	10	0.112	1

* FOR FIBERS > 10µm ONLY

INDIVIDUAL ANALYTICAL RESULTS

Laboratory I.D.	Client I.D.	No of Asbestos Fibers	Detection Limit (MFL)	Concentration MFL Fibers >10 µm
163946-1	440-96606-1	ND	9.1	< 9.1

U

The analysis was carried out to the approved TEM method. This laboratory is in compliance with the quality specified by the method.

BTM Kelly

Authorized Signature

NA Not Applicable
 ND None Detected
 MCE Mixed Cellulose Ester
 GO Grid Openings
 MFL Million Fibers per Liter

LEVEL IV

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-96457-1

Client Project/Site: Boeing SSFL NPDES Annual and Routine
008

Revision: 5

For:

Haley & Aldrich, Inc.

5333 Mission Center Road

Suite 300

San Diego, California 92108

Attn: Nancy Gardiner



Authorized for release by:

1/30/2015 6:38:06 PM

Debby Wilson, Manager of Project Management

(949)261-1022

debby.wilson@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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I certify under penalty of perjury that the information contained in this report and all attachments was produced in accordance with the indicated methods and laboratory standard operating procedures, except as noted, and are complete and accurate to the best of my knowledge and belief. Subcontract laboratory reports that are attached have been evaluated for completeness and quality control acceptability.



Debby Wilson
Manager of Project Management
1/30/2015 6:38:06 PM



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Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-96457-1	Outfall008_20141212_Grab	Water	12/12/14 08:55	12/12/14 13:45
440-96479-1	Outfall008_20141212_Grab	Water	12/12/14 08:55	12/12/14 16:39
440-96479-2	TB-20141212	Water	12/12/14 08:55	12/12/14 16:39
440-96606-1	Outfall008_20141212_Comp	Water	12/12/14 15:17	12/13/14 12:25
440-96606-2	Trip_Blank_20141212	Water	12/12/14 12:25	12/13/14 12:25

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Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Job ID: 440-96457-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-96457-1

Comments

Revised report to correct the composite sample description per chain of custody. Revised report 01/28/15 to add benzo(a)pyrene and trichlorofluoromethane which are part of the priority pollutants list.

Receipt

The samples were received on 12/12/2014 1:45 PM, 12/12/2014 4:39 PM and 12/13/2014 12:25 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 0.5° C, 3.3° C, 3.6° C, 4.3° C and 5.0° C.

GC/MS VOA

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

GC/MS Semi VOA

Method(s) 525.2: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 224763. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

Method(s) 525.2: Surrogate recovery for the following sample(s) was outside the upper control limit: Outfall008_20141212 (440-96606-1). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 625 Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 224726. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

Method(s) 625: The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for batch 224726 recovered outside control limits for dimethylphthalate. This analyte was biased high in the LCS and was 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

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

GC Semi VOA

Method(s) 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 225106. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

Method(s) 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 225106. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch. (LCS 440-225106/4-A)

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

RAD

Method(s) ExtChrom: Uranium (165361): The samples are a dark yellow-brown color. A reduced aliquot of 100 mL was used to prevent matrix interference. Outfall008_20141212 (440-96606-1)

Method(s) PrecSep_0: radium-228 batch #168188: The following samples were reduced to 500 mL because they were orange and contained sediment: Outfall008_20141212 (440-96606-1).

Method(s) PrecSep_0: radium-228 batch #168188: Insufficient volume of the following samples was available to perform a sample duplicate associated with this batch: Outfall008_20141212 (440-96606-1), Trip_Blank_20141212 (440-96606-2). A LCSD was performed.

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Job ID: 440-96457-1 (Continued)

Laboratory: TestAmerica Irvine (Continued)

Method(s) PrecSep-21: radium-228 batch #164116 and radium-226 batch #164103: The following samples were reduced to 500 mL due to sediment: Outfall008_20141212 (440-96606-1).

Method(s) PrecSep-7: strontium-90: The following samples in batch #165620 were prepped at a reduced aliquot due to the presence of sediment: Outfall008_20141212 (440-96606-1).

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

Metals

Method(s) 245.1: The continuing calibration verification (CCV) associated with analytical batch 227057 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 following samples are impacted: Outfall008_20141212 (440-96606-1).

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

General Chemistry

Method(s) SM 4500 CN E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 224827 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recovery were within acceptance limits.

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

Biology

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

Subcontract non-Sister

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

Organic Prep

Method(s) 525.2: The reference method requires samples to be preserved to a pH of <2. The following sample(s) was received with insufficient preservation at a pH of 7: Outfall008_20141212 (440-96606-1). The sample(s) was preserved to the appropriate pH in the laboratory.

Method(s) 1664A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 226034. The laboratory control sample (LCS) was performed in duplicate 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.

Subcontract Work

Methods Acute FH minnow, EPA/821-R02-012, Chronic Cerio, EPA/821-R02-013: These methods were subcontracted to Aquatic Testing Laboratories. The subcontract laboratory certifications are different from that of the facility issuing the final report.

Method Asbestos: This method was subcontracted to EMS Laboratories Pasadena, CA. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method 1613 dioxin: This method was subcontracted to TestAmerica Knoxville. The subcontract laboratory certification is different from that of the facility issuing the final report. Refer to case narrative in appended report.

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

Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Client Sample ID: Outfall008_20141212_Grab

Lab Sample ID: 440-96457-1

Date Collected: 12/12/14 08:55

Matrix: Water

Date Received: 12/12/14 13:45

Method: SM 9221E - Coliforms, Fecal (Multiple-Tube Fermentation)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	1600		1.8	1.8	MPN/100mL			12/12/14 15:56	1

Method: SM 9221F - E.Coli (Multiple-Tube Fermentation; EC-MUG)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Escherichia coli	1600		1.8	1.8	MPN/100mL			12/12/14 15:56	1

Client Sample ID: Outfall008_20141212_Grab

Lab Sample ID: 440-96479-1

Date Collected: 12/12/14 08:55

Matrix: Water

Date Received: 12/12/14 16:39

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/15/14 14:38	1
2-Chloroethyl vinyl ether	ND		2.0	1.0	ug/L			12/14/14 18:41	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/15/14 14:38	1
Acrolein	ND		5.0	2.5	ug/L			12/14/14 18:41	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/15/14 14:38	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/14/14 18:41	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/15/14 14:38	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/15/14 14:38	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/15/14 14:38	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/15/14 14:38	1
Benzene	ND		0.50	0.25	ug/L			12/15/14 14:38	1
Bromoform	ND		1.0	0.40	ug/L			12/15/14 14:38	1
Bromomethane	ND		0.50	0.25	ug/L			12/15/14 14:38	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/15/14 14:38	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/15/14 14:38	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/15/14 14:38	1
Chloroethane	ND		1.0	0.40	ug/L			12/15/14 14:38	1
Chloroform	ND		0.50	0.25	ug/L			12/15/14 14:38	1
Chloromethane	ND		0.50	0.25	ug/L			12/15/14 14:38	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/15/14 14:38	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/15/14 14:38	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/15/14 14:38	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/15/14 14:38	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/15/14 14:38	1
Toluene	ND		0.50	0.25	ug/L			12/15/14 14:38	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/15/14 14:38	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/15/14 14:38	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/15/14 14:38	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/15/14 14:38	1
Trichloroethene	ND		0.50	0.25	ug/L			12/15/14 14:38	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/15/14 14:38	1
Xylenes, Total	ND		1.0	0.50	ug/L			12/15/14 14:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	111		80 - 128		12/14/14 18:41	1
Dibromofluoromethane (Surr)	107		76 - 132		12/14/14 18:41	1
4-Bromofluorobenzene (Surr)	95		80 - 120		12/15/14 14:38	1
Dibromofluoromethane (Surr)	91		76 - 132		12/15/14 14:38	1

TestAmerica Irvine

Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Client Sample ID: Outfall008_20141212_Grab

Lab Sample ID: 440-96479-1

Date Collected: 12/12/14 08:55

Matrix: Water

Date Received: 12/12/14 16:39

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 128		12/15/14 14:38	1

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		1.0	0.25	ug/L			12/12/14 20:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		4.9	1.4	mg/L		12/21/14 14:30	12/21/14 17:01	1

Client Sample ID: TB-20141212

Lab Sample ID: 440-96479-2

Date Collected: 12/12/14 08:55

Matrix: Water

Date Received: 12/12/14 16:39

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/15/14 14:08	1
2-Chloroethyl vinyl ether	ND		2.0	1.0	ug/L			12/14/14 18:12	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/15/14 14:08	1
Acrolein	ND		5.0	2.5	ug/L			12/14/14 18:12	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/15/14 14:08	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/14/14 18:12	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/15/14 14:08	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/15/14 14:08	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/15/14 14:08	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/15/14 14:08	1
Benzene	ND		0.50	0.25	ug/L			12/15/14 14:08	1
Bromoform	ND		1.0	0.40	ug/L			12/15/14 14:08	1
Bromomethane	ND		0.50	0.25	ug/L			12/15/14 14:08	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/15/14 14:08	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/15/14 14:08	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/15/14 14:08	1
Chloroethane	ND		1.0	0.40	ug/L			12/15/14 14:08	1
Chloroform	ND		0.50	0.25	ug/L			12/15/14 14:08	1
Chloromethane	ND		0.50	0.25	ug/L			12/15/14 14:08	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/15/14 14:08	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/15/14 14:08	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/15/14 14:08	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/15/14 14:08	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/15/14 14:08	1
Toluene	ND		0.50	0.25	ug/L			12/15/14 14:08	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/15/14 14:08	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/15/14 14:08	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/15/14 14:08	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/15/14 14:08	1
Trichloroethene	ND		0.50	0.25	ug/L			12/15/14 14:08	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/15/14 14:08	1
Xylenes, Total	ND		1.0	0.50	ug/L			12/15/14 14:08	1

TestAmerica Irvine

Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Client Sample ID: TB-20141212

Lab Sample ID: 440-96479-2

Date Collected: 12/12/14 08:55

Matrix: Water

Date Received: 12/12/14 16:39

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	112		80 - 128		12/14/14 18:12	1
Dibromofluoromethane (Surr)	100		76 - 132		12/14/14 18:12	1
4-Bromofluorobenzene (Surr)	97		80 - 120		12/15/14 14:08	1
Dibromofluoromethane (Surr)	91		76 - 132		12/15/14 14:08	1
Toluene-d8 (Surr)	100		80 - 128		12/15/14 14:08	1

Client Sample ID: Outfall008_20141212_Comp

Lab Sample ID: 440-96606-1

Date Collected: 12/12/14 15:17

Matrix: Water

Date Received: 12/13/14 12:25

Method: 525.2 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorpyrifos	ND		0.96	0.48	ug/L		12/13/14 15:30	12/15/14 17:59	1
Diazinon	ND		0.24	0.12	ug/L		12/13/14 15:30	12/15/14 17:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,3-Dimethyl-2-nitrobenzene	90		70 - 130	12/13/14 15:30	12/15/14 17:59	1
Perylene-d12	87		70 - 130	12/13/14 15:30	12/15/14 17:59	1
Triphenylphosphate	136	LH	70 - 130	12/13/14 15:30	12/15/14 17:59	1

Method: 625 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 23:21	1
Acenaphthylene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 23:21	1
Anthracene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 23:21	1
Benzidine	ND		9.57	4.78	ug/L		12/15/14 12:32	12/22/14 23:21	1
Benzo[a]anthracene	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 23:21	1
Benzo[b]fluoranthene	ND		1.91	0.957	ug/L		12/15/14 12:32	12/22/14 23:21	1
Benzo[k]fluoranthene	ND		0.478	0.239	ug/L		12/15/14 12:32	12/22/14 23:21	1
Benzo[a]pyrene	ND		1.91	0.478	ug/L		12/15/14 12:32	12/22/14 23:21	1
Bis(2-chloroethoxy)methane	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 23:21	1
Bis(2-chloroethyl)ether	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 23:21	1
Bis(2-ethylhexyl) phthalate	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 23:21	1
4-Bromophenyl phenyl ether	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 23:21	1
Butyl benzyl phthalate	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 23:21	1
4-Chloro-3-methylphenol	ND		1.91	0.191	ug/L		12/15/14 12:32	12/22/14 23:21	1
2-Chloronaphthalene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 23:21	1
2-Chlorophenol	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 23:21	1
4-Chlorophenyl phenyl ether	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 23:21	1
Chrysene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 23:21	1
Dibenz(a,h)anthracene	ND		0.478	0.239	ug/L		12/15/14 12:32	12/22/14 23:21	1
Di-n-butyl phthalate	ND		1.91	0.957	ug/L		12/15/14 12:32	12/22/14 23:21	1
1,2-Dichlorobenzene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 23:21	1
1,3-Dichlorobenzene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 23:21	1
1,4-Dichlorobenzene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 23:21	1
3,3'-Dichlorobenzidine	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 23:21	1
2,4-Dichlorophenol	ND		1.91	0.957	ug/L		12/15/14 12:32	12/22/14 23:21	1
Diethyl phthalate	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 23:21	1
2,4-Dimethylphenol	ND		1.91	0.957	ug/L		12/15/14 12:32	12/22/14 23:21	1
Dimethyl phthalate	ND	LQ	0.478	0.239	ug/L		12/15/14 12:32	12/22/14 23:21	1
4,6-Dinitro-2-methylphenol	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 23:21	1

TestAmerica Irvine

Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Client Sample ID: Outfall008_20141212_Comp

Lab Sample ID: 440-96606-1

Date Collected: 12/12/14 15:17

Matrix: Water

Date Received: 12/13/14 12:25

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrophenol	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 23:21	1
2,4-Dinitrotoluene	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 23:21	1
2,6-Dinitrotoluene	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 23:21	1
Di-n-octyl phthalate	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 23:21	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 23:21	1
Fluoranthene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 23:21	1
Fluorene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 23:21	1
Hexachlorobenzene	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 23:21	1
Hexachlorobutadiene	ND		1.91	0.478	ug/L		12/15/14 12:32	12/22/14 23:21	1
Hexachloroethane	ND		2.87	0.478	ug/L		12/15/14 12:32	12/22/14 23:21	1
Hexachlorocyclopentadiene	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 23:21	1
Indeno[1,2,3-cd]pyrene	ND		1.91	0.957	ug/L		12/15/14 12:32	12/22/14 23:21	1
Isophorone	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 23:21	1
Naphthalene	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 23:21	1
Nitrobenzene	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 23:21	1
2-Nitrophenol	ND		1.91	0.957	ug/L		12/15/14 12:32	12/22/14 23:21	1
4-Nitrophenol	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 23:21	1
N-Nitrosodimethylamine	ND		1.91	0.957	ug/L		12/15/14 12:32	12/22/14 23:21	1
N-Nitrosodiphenylamine	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 23:21	1
N-Nitrosodi-n-propylamine	ND		1.91	0.957	ug/L		12/15/14 12:32	12/22/14 23:21	1
Pentachlorophenol	ND		1.91	0.957	ug/L		12/15/14 12:32	12/22/14 23:21	1
Phenanthrene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 23:21	1
Phenol	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 23:21	1
Pyrene	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 23:21	1
1,2,4-Trichlorobenzene	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 23:21	1
2,4,6-Trichlorophenol	ND		0.957	0.478	ug/L		12/15/14 12:32	12/22/14 23:21	1
Benzo[g,h,i]perylene	ND		4.78	1.91	ug/L		12/15/14 12:32	12/22/14 23:21	1
bis (2-chloroisopropyl) ether	ND		0.478	0.191	ug/L		12/15/14 12:32	12/22/14 23:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	69		50 - 120	12/15/14 12:32	12/22/14 23:21	1
2-Fluorophenol	65		30 - 120	12/15/14 12:32	12/22/14 23:21	1
2,4,6-Tribromophenol	82		40 - 120	12/15/14 12:32	12/22/14 23:21	1
Nitrobenzene-d5	77		45 - 120	12/15/14 12:32	12/22/14 23:21	1
Terphenyl-d14	110		37 - 144	12/15/14 12:32	12/22/14 23:21	1
Phenol-d6	74		35 - 120	12/15/14 12:32	12/22/14 23:21	1

Method: 608 PCB LL - Polychlorinated Biphenyls (PCBs) Low level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.48	0.24	ug/L		12/16/14 16:47	12/17/14 21:55	1
Aroclor 1221	ND		0.48	0.24	ug/L		12/16/14 16:47	12/17/14 21:55	1
Aroclor 1232	ND		0.48	0.24	ug/L		12/16/14 16:47	12/17/14 21:55	1
Aroclor 1242	ND		0.48	0.24	ug/L		12/16/14 16:47	12/17/14 21:55	1
Aroclor 1248	ND		0.48	0.24	ug/L		12/16/14 16:47	12/17/14 21:55	1
Aroclor 1254	ND		0.48	0.24	ug/L		12/16/14 16:47	12/17/14 21:55	1
Aroclor 1260	ND		0.48	0.24	ug/L		12/16/14 16:47	12/17/14 21:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	57		29 - 115	12/16/14 16:47	12/17/14 21:55	1

TestAmerica Irvine

Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Client Sample ID: Outfall008_20141212_Comp

Lab Sample ID: 440-96606-1

Date Collected: 12/12/14 15:17

Matrix: Water

Date Received: 12/13/14 12:25

Method: 608 Pesticides - Organochlorine Pesticides Low level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0048	0.0014	ug/L		12/16/14 16:47	12/18/14 04:58	1
alpha-BHC	ND		0.0048	0.0024	ug/L		12/16/14 16:47	12/18/14 04:58	1
beta-BHC	ND		0.0095	0.0038	ug/L		12/16/14 16:47	12/18/14 04:58	1
Chlordane (technical)	ND		0.095	0.076	ug/L		12/16/14 16:47	12/18/14 04:58	1
delta-BHC	ND		0.0048	0.0033	ug/L		12/16/14 16:47	12/18/14 04:58	1
Dieldrin	ND		0.0048	0.0019	ug/L		12/16/14 16:47	12/18/14 04:58	1
Endosulfan I	ND		0.0048	0.0029	ug/L		12/16/14 16:47	12/18/14 04:58	1
Endosulfan II	ND		0.0048	0.0019	ug/L		12/16/14 16:47	12/18/14 04:58	1
Endosulfan sulfate	ND		0.0095	0.0029	ug/L		12/16/14 16:47	12/18/14 04:58	1
Endrin	ND		0.0048	0.0019	ug/L		12/16/14 16:47	12/18/14 04:58	1
Endrin aldehyde	ND		0.0095	0.0019	ug/L		12/16/14 16:47	12/18/14 04:58	1
gamma-BHC (Lindane)	ND		0.0095	0.0029	ug/L		12/16/14 16:47	12/18/14 04:58	1
Heptachlor	ND		0.0095	0.0029	ug/L		12/16/14 16:47	12/18/14 04:58	1
Heptachlor epoxide	ND		0.0048	0.0024	ug/L		12/16/14 16:47	12/18/14 04:58	1
Toxaphene	ND		0.48	0.24	ug/L		12/16/14 16:47	12/18/14 04:58	1
4,4'-DDD	ND		0.0048	0.0038	ug/L		12/16/14 16:47	12/18/14 04:58	1
4,4'-DDE	ND		0.0048	0.0029	ug/L		12/16/14 16:47	12/18/14 04:58	1
4,4'-DDT	ND		0.0095	0.0038	ug/L		12/16/14 16:47	12/18/14 04:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	36		10 - 139				12/16/14 16:47	12/18/14 04:58	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.9		0.50	0.25	mg/L			12/13/14 14:43	1
Nitrate as N	4.3		0.55	0.28	mg/L			12/13/14 15:17	5
Nitrite as N	ND		0.15	0.070	mg/L			12/13/14 14:43	1
Sulfate	4.3		0.50	0.25	mg/L			12/13/14 14:43	1

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	2.5	J,DX	4.0	0.95	ug/L			12/29/14 14:54	1

Method: NO3NO2 Calc - Nitrogen, Nitrate-Nitrite

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	4.3		0.55	0.28	mg/L			12/29/14 13:52	1

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

Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000094	0.00000220	ug/L		12/17/14 23:30	01/12/15 13:01	1
Total TCDD	ND		0.0000094	0.00000220	ug/L		12/17/14 23:30	01/12/15 13:01	1
1,2,3,7,8-PeCDD	ND		0.0000475	0.00000128	ug/L		12/17/14 23:30	01/12/15 13:01	1
Total PeCDD	ND		0.0000475	0.00000128	ug/L		12/17/14 23:30	01/12/15 13:01	1
1,2,3,4,7,8-HxCDD	ND		0.0000475	0.00000114	ug/L		12/17/14 23:30	01/12/15 13:01	1
1,2,3,6,7,8-HxCDD	ND		0.0000475	0.00000121	ug/L		12/17/14 23:30	01/12/15 13:01	1
1,2,3,7,8,9-HxCDD	ND		0.0000475	0.00000109	ug/L		12/17/14 23:30	01/12/15 13:01	1
Total HxCDD	ND		0.0000475	0.00000115	ug/L		12/17/14 23:30	01/12/15 13:01	1
1,2,3,4,6,7,8-HpCDD	0.00000609	Q J	0.0000475	0.00000136	ug/L		12/17/14 23:30	01/12/15 13:01	1
Total HpCDD	0.0000139	Q J	0.0000475	0.00000136	ug/L		12/17/14 23:30	01/12/15 13:01	1

TestAmerica Irvine

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Client Sample ID: Outfall008_20141212_Comp

Lab Sample ID: 440-96606-1

Date Collected: 12/12/14 15:17

Matrix: Water

Date Received: 12/13/14 12:25

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

Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
OCDD	0.0000678	B J	0.0000950	0.00000145	ug/L		12/17/14 23:30	01/12/15 13:01	1
2,3,7,8-TCDF	ND		0.0000094	0.00000163	ug/L		12/17/14 23:30	01/12/15 13:01	1
Total TCDF	ND		0.0000094	0.00000163	ug/L		12/17/14 23:30	01/12/15 13:01	1
1,2,3,7,8-PeCDF	ND		0.0000475	0.000000870	ug/L		12/17/14 23:30	01/12/15 13:01	1
2,3,4,7,8-PeCDF	ND		0.0000475	0.000000780	ug/L		12/17/14 23:30	01/12/15 13:01	1
Total PeCDF	ND		0.0000475	0.000000820	ug/L		12/17/14 23:30	01/12/15 13:01	1
1,2,3,4,7,8-HxCDF	ND		0.0000475	0.000000660	ug/L		12/17/14 23:30	01/12/15 13:01	1
1,2,3,6,7,8-HxCDF	ND		0.0000475	0.000000620	ug/L		12/17/14 23:30	01/12/15 13:01	1
2,3,4,6,7,8-HxCDF	ND		0.0000475	0.000000570	ug/L		12/17/14 23:30	01/12/15 13:01	1
1,2,3,7,8,9-HxCDF	ND		0.0000475	0.000000780	ug/L		12/17/14 23:30	01/12/15 13:01	1
Total HxCDF	0.00000173	Q J	0.0000475	0.000000650	ug/L		12/17/14 23:30	01/12/15 13:01	1
1,2,3,4,6,7,8-HpCDF	0.00000244	J	0.0000475	0.000000960	ug/L		12/17/14 23:30	01/12/15 13:01	1
1,2,3,4,7,8,9-HpCDF	ND		0.0000475	0.00000119	ug/L		12/17/14 23:30	01/12/15 13:01	1
Total HpCDF	0.00000244	J	0.0000475	0.00000106	ug/L		12/17/14 23:30	01/12/15 13:01	1
OCDF	0.00000296	Q J	0.0000950	0.00000109	ug/L		12/17/14 23:30	01/12/15 13:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	97		35 - 197				12/17/14 23:30	01/12/15 13:01	1
Internal Standard	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	86		25 - 164				12/17/14 23:30	01/12/15 13:01	1
13C-1,2,3,7,8-PeCDD	95		25 - 181				12/17/14 23:30	01/12/15 13:01	1
13C-1,2,3,4,7,8-HxCDD	85		32 - 141				12/17/14 23:30	01/12/15 13:01	1
13C-1,2,3,6,7,8-HxCDD	91		28 - 130				12/17/14 23:30	01/12/15 13:01	1
13C-1,2,3,4,6,7,8-HpCDD	94		23 - 140				12/17/14 23:30	01/12/15 13:01	1
13C-OCDD	100		17 - 157				12/17/14 23:30	01/12/15 13:01	1
13C-2,3,7,8-TCDF	76		24 - 169				12/17/14 23:30	01/12/15 13:01	1
13C-1,2,3,7,8-PeCDF	87		24 - 185				12/17/14 23:30	01/12/15 13:01	1
13C-2,3,4,7,8-PeCDF	84		21 - 178				12/17/14 23:30	01/12/15 13:01	1
13C-1,2,3,4,7,8-HxCDF	74		26 - 152				12/17/14 23:30	01/12/15 13:01	1
13C-1,2,3,6,7,8-HxCDF	80		26 - 123				12/17/14 23:30	01/12/15 13:01	1
13C-2,3,4,6,7,8-HxCDF	89		28 - 136				12/17/14 23:30	01/12/15 13:01	1
13C-1,2,3,7,8,9-HxCDF	89		29 - 147				12/17/14 23:30	01/12/15 13:01	1
13C-1,2,3,4,6,7,8-HpCDF	81		28 - 143				12/17/14 23:30	01/12/15 13:01	1
13C-1,2,3,4,7,8,9-HpCDF	88		26 - 138				12/17/14 23:30	01/12/15 13:01	1
13C-OCDF	100		17 - 157				12/17/14 23:30	01/12/15 13:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	3100		50	25	ug/L		12/24/14 10:59	12/24/14 17:29	1
Arsenic	ND		10	5.0	ug/L		12/24/14 10:59	12/29/14 13:35	1
Boron	0.095		0.050	0.010	mg/L		12/24/14 10:59	12/24/14 17:29	1
Beryllium	ND		2.0	1.0	ug/L		12/24/14 10:59	12/24/14 17:29	1
Chromium	3.8	J,DX	5.0	2.5	ug/L		12/24/14 10:59	12/24/14 17:29	1
Iron	3.0	MB	0.040	0.010	mg/L		12/24/14 10:59	12/24/14 17:29	1
Nickel	ND		10	5.0	ug/L		12/24/14 10:59	12/24/14 17:29	1
Vanadium	6.6	J,DX	10	5.0	ug/L		12/24/14 10:59	12/24/14 17:29	1
Zinc	31		20	10	ug/L		12/24/14 10:59	12/24/14 17:29	1

TestAmerica Irvine

Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Client Sample ID: Outfall008_20141212_Comp

Lab Sample ID: 440-96606-1

Date Collected: 12/12/14 15:17

Matrix: Water

Date Received: 12/13/14 12:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		10	5.0	ug/L		12/24/14 10:59	12/24/14 17:29	1
Hardness, as CaCO3	55		0.33	0.17	mg/L		12/24/14 10:59	12/24/14 17:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	190	QP	50	25	ug/L		12/24/14 09:43	12/30/14 09:52	1
Arsenic	ND	QP	10	5.0	ug/L		12/24/14 09:43	12/30/14 09:52	1
Boron	0.095	QP	0.050	0.010	mg/L		12/24/14 09:43	12/30/14 09:52	1
Beryllium	ND	QP	2.0	1.0	ug/L		12/24/14 09:43	12/30/14 09:52	1
Chromium	ND	QP	5.0	2.5	ug/L		12/24/14 09:43	12/30/14 09:52	1
Iron	0.16	QP	0.040	0.010	mg/L		12/24/14 09:43	12/30/14 09:52	1
Nickel	ND	QP	10	5.0	ug/L		12/24/14 09:43	12/30/14 09:52	1
Vanadium	ND	QP	10	5.0	ug/L		12/24/14 09:43	12/30/14 09:52	1
Zinc	12	QP	20	10	ug/L		12/24/14 09:43	12/30/14 09:52	1
Silver	ND	QP	10	5.0	ug/L		12/24/14 09:43	12/30/14 09:52	1
Hardness, as CaCO3	48	QP	0.33	0.17	mg/L		12/24/14 09:43	12/30/14 09:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.25	ug/L		12/23/14 09:41	12/23/14 16:55	1
Copper	5.2		2.0	0.50	ug/L		12/23/14 09:41	12/23/14 16:55	1
Lead	2.0		1.0	0.50	ug/L		12/23/14 09:41	12/23/14 16:55	1
Antimony	ND		2.0	0.50	ug/L		12/23/14 09:41	12/23/14 16:55	1
Selenium	ND		2.0	0.50	ug/L		12/23/14 09:41	12/23/14 16:55	1
Thallium	ND		1.0	0.50	ug/L		12/23/14 09:41	12/23/14 16:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	QP	1.0	0.25	ug/L		12/24/14 09:59	12/24/14 17:19	1
Copper	3.2	QP	2.0	0.50	ug/L		12/24/14 09:59	12/24/14 17:19	1
Lead	ND	QP	1.0	0.50	ug/L		12/24/14 09:59	12/24/14 17:19	1
Antimony	ND	QP	2.0	0.50	ug/L		12/24/14 09:59	12/24/14 17:19	1
Selenium	ND	QP	2.0	0.50	ug/L		12/24/14 09:59	12/24/14 17:19	1
Thallium	ND	QP	1.0	0.50	ug/L		12/24/14 09:59	12/24/14 17:19	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		12/17/14 09:30	12/17/14 17:34	1

Method: 245.1 - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	LQ IB	0.20	0.10	ug/L		12/24/14 06:37	12/24/14 15:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	120		10	5.0	mg/L			12/18/14 05:37	1
Total Suspended Solids	27		2.5	1.3	mg/L			12/19/14 00:18	1
Cyanide, Total	ND		5.0	2.5	ug/L		12/15/14 15:08	12/15/14 17:51	1
Fluoride	0.15		0.10	0.050	mg/L			12/22/14 09:26	1
Ammonia (as N)	0.140	J,DX	0.200	0.100	mg/L			01/02/15 16:50	1

TestAmerica Irvine

Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Client Sample ID: Outfall008_20141212_Comp

Lab Sample ID: 440-96606-1

Date Collected: 12/12/14 15:17

Matrix: Water

Date Received: 12/13/14 12:25

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Gross Alpha	3.04		1.32	1.37	1.59	pCi/L	12/22/14 10:58	01/04/15 16:39	1
Gross Beta	6.61		1.05	1.24	1.06	pCi/L	12/22/14 10:58	01/04/15 16:39	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Cesium-137	0.000	U	2.82	2.82	12.4	pCi/L	12/19/14 11:41	12/22/14 15:30	1
Potassium-40	-38.0	U	188	188	171	pCi/L	12/19/14 11:41	12/22/14 15:30	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Radium-226	0.0806	U	0.127	0.127	0.218	pCi/L	12/18/14 00:17	01/13/15 07:19	1
<i>Carrier</i>	<i>%Yield</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Ba Carrier	80.5		40 - 110				12/18/14 00:17	01/13/15 07:19	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Radium-228	0.316	U	0.384	0.385	0.636	pCi/L	01/13/15 12:50	01/16/15 11:18	1
<i>Carrier</i>	<i>%Yield</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Ba Carrier	96.5		40 - 110				01/13/15 12:50	01/16/15 11:18	1
Y Carrier	89.7		40 - 110				01/13/15 12:50	01/16/15 11:18	1

Method: 905 - Strontium-90 (GFPC)

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Strontium-90	-0.264	U	0.377	0.378	0.725	pCi/L	12/29/14 18:01	01/07/15 15:56	1
<i>Carrier</i>	<i>%Yield</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Sr Carrier	70.4		40 - 110				12/29/14 18:01	01/07/15 15:56	1
Y Carrier	91.6		40 - 110				12/29/14 18:01	01/07/15 15:56	1

Method: 906.0 - Tritium, Total (LSC)

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Tritium	99.5	U	184	184	313	pCi/L	01/02/15 09:02	01/02/15 16:52	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Total Uranium	0.556	U	0.660	0.662	0.841	pCi/L	12/24/14 10:49	12/31/14 14:22	1

TestAmerica Irvine

Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Client Sample ID: Trip_Blank_20141212

Lab Sample ID: 440-96606-2

Date Collected: 12/12/14 12:25

Matrix: Water

Date Received: 12/13/14 12:25

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Gross Alpha	0.0304	U	0.724	0.724	1.41	pCi/L	12/22/14 10:58	01/04/15 16:40	1
Gross Beta	-0.160	U	0.522	0.523	0.959	pCi/L	12/22/14 10:58	01/04/15 16:40	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Cesium-137	-0.615	U	6.78	6.78	12.9	pCi/L	12/19/14 11:41	12/22/14 15:50	1
Potassium-40	-5.94	U	112	112	214	pCi/L	12/19/14 11:41	12/22/14 15:50	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Radium-226	0.0444	U	0.0620	0.0622	0.105	pCi/L	12/18/14 00:17	01/13/15 07:14	1
<i>Carrier</i>	<i>%Yield</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Ba Carrier	109		40 - 110				12/18/14 00:17	01/13/15 07:14	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Radium-228	0.463		0.212	0.216	0.302	pCi/L	01/13/15 12:50	01/16/15 11:18	1
<i>Carrier</i>	<i>%Yield</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Ba Carrier	102		40 - 110				01/13/15 12:50	01/16/15 11:18	1
Y Carrier	91.6		40 - 110				01/13/15 12:50	01/16/15 11:18	1

Method: 905 - Strontium-90 (GFPC)

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Strontium-90	-0.0641	U	0.156	0.156	0.292	pCi/L	12/29/14 18:01	01/07/15 15:57	1
<i>Carrier</i>	<i>%Yield</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Sr Carrier	86.3		40 - 110				12/29/14 18:01	01/07/15 15:57	1
Y Carrier	89.7		40 - 110				12/29/14 18:01	01/07/15 15:57	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Total Uranium	-0.00481	U	0.04906	0.04912	0.142	pCi/L	12/24/14 10:49	12/31/14 14:22	1

TestAmerica Irvine

Method Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method	Method Description	Protocol	Laboratory
624	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL IRV
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	TAL IRV
625	Semivolatile Organic Compounds (GC/MS)	EPA	TAL IRV
608 PCB LL	Polychlorinated Biphenyls (PCBs) Low level	40CFR136A	TAL IRV
608 Pesticides	Organochlorine Pesticides Low level	40CFR136A	TAL IRV
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	TAL IRV
300.0	Anions, Ion Chromatography	MCAWW	TAL IRV
314.0	Perchlorate (IC)	EPA	TAL IRV
NO3NO2 Calc	Nitrogen, Nitrate-Nitrite	EPA	TAL IRV
1613B	Dioxins/Furans, HRGC/HRMS (1613B)	EPA-5	TAL KNX
200.7 Rev 4.4	Metals (ICP)	EPA	TAL IRV
200.8	Metals (ICP/MS)	EPA	TAL IRV
245.1	Mercury (CVAA)	EPA	TAL IRV
1664A	HEM and SGT-HEM	1664A	TAL IRV
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL IRV
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL IRV
SM 4500 CN E	Cyanide, Total (Low Level)	SM	TAL IRV
SM 4500 F C	Fluoride	SM	TAL IRV
SM 4500 NH3 G	Ammonia	SM	TAL IRV
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	TAL SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	TAL SL
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
905	Strontium-90 (GFPC)	EPA	TAL SL
906.0	Tritium, Total (LSC)	EPA	TAL SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	TAL SL
SM 9221E	Coliforms, Fecal (Multiple-Tube Fermentation)	SM	TAL IRV
SM 9221F	E.Coli (Multiple-Tube Fermentation; EC-MUG)	SM	TAL IRV
TEM	EPA 600 R 94 134, 100.2		
Acute FH minnow, EPA/821-R02-012	Bioassay	NONE	SC0127
Asbestos	EPA 100.2 Asbestos in Drinking Water	NONE	EMS Labs
Chronic Cerio, EPA/821-R02-013	Bioassay	NONE	SC0127

Protocol References:

- 1664A = EPA-821-98-002
- 40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
- DOE = U.S. Department of Energy
- EPA = US Environmental Protection Agency
- EPA-5 = EPA-5
- MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
- NONE = NONE
- SM = "Standard Methods For The Examination Of Water And Wastewater",

Laboratory References:

- EMS Labs = EMS Laboratories Pasadena, CA, 117 West Bellevue Drive, Ste 3, Pasadena, CA 91105-2503
- SC0127 = Aquatic Testing Laboratories, 4350 Transport #107, Ventura, CA 93003
- TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022
- TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000
- TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Client Sample ID: Outfall008_20141212_Grab

Lab Sample ID: 440-96457-1

Date Collected: 12/12/14 08:55

Matrix: Water

Date Received: 12/12/14 13:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 9221E		1	100 mL	100 mL	225038	(Start) 12/12/14 15:56 (End) 12/14/14 14:04	AMH	TAL IRV
Total/NA	Analysis	SM 9221F		1	100 mL	100 mL	225040	(Start) 12/12/14 15:56 (End) 12/14/14 14:04	AMH	TAL IRV

Client Sample ID: Outfall008_20141212_Grab

Lab Sample ID: 440-96479-1

Date Collected: 12/12/14 08:55

Matrix: Water

Date Received: 12/12/14 16:39

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	10 mL	10 mL	224609	12/15/14 14:38	TN	TAL IRV
Total/NA	Analysis	624		1	10 mL	10 mL	224555	12/14/14 18:41	TN	TAL IRV
Total/NA	Analysis	218.6		1	10 mL		224245	12/12/14 20:52	MN	TAL IRV
Total/NA	Prep	1664A			1030 mL	1000 mL	226034	12/21/14 14:30	JMB	TAL IRV
Total/NA	Analysis	1664A		1	1030 mL	1000 mL	226039	12/21/14 17:01	JMB	TAL IRV

Client Sample ID: TB-20141212

Lab Sample ID: 440-96479-2

Date Collected: 12/12/14 08:55

Matrix: Water

Date Received: 12/12/14 16:39

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	10 mL	10 mL	224609	12/15/14 14:08	TN	TAL IRV
Total/NA	Analysis	624		1	10 mL	10 mL	224555	12/14/14 18:12	TN	TAL IRV

Client Sample ID: Outfall008_20141212_Comp

Lab Sample ID: 440-96606-1

Date Collected: 12/12/14 15:17

Matrix: Water

Date Received: 12/13/14 12:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	525.2			1040 mL	1 mL	224545	12/13/14 15:30	CN	TAL IRV
Total/NA	Analysis	525.2		1	1040 mL	1 mL	224763	12/15/14 17:59	CN	TAL IRV
Total/NA	Prep	625			1045 mL	2 mL	224726	12/15/14 12:32	AK	TAL IRV
Total/NA	Analysis	625		1	1045 mL	2 mL	226134	12/22/14 23:21	DF	TAL IRV
Total/NA	Prep	608			1050 mL	2 mL	225106	12/16/14 16:47	QCT	TAL IRV
Total/NA	Analysis	608 PCB LL		1	1050 mL	2 mL	225341	12/17/14 21:55	JM	TAL IRV
Total/NA	Prep	608			1050 mL	2 mL	225106	12/16/14 16:47	QCT	TAL IRV
Total/NA	Analysis	608 Pesticides		1	1050 mL	2 mL	225351	12/18/14 04:58	KS	TAL IRV
Total/NA	Analysis	300.0		1	5 mL		224500	12/13/14 14:43	JRA	TAL IRV
Total/NA	Analysis	300.0		1	5 mL		224501	12/13/14 14:43	JRA	TAL IRV
Total/NA	Analysis	300.0		5	5 mL		224500	12/13/14 15:17	JRA	TAL IRV

TestAmerica Irvine

Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Client Sample ID: Outfall008_20141212_Comp

Lab Sample ID: 440-96606-1

Date Collected: 12/12/14 15:17

Matrix: Water

Date Received: 12/13/14 12:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		1	1 mL		227034	12/29/14 14:54	CH	TAL IRV
Total/NA	Analysis	NO3NO2 Calc		1			227109	12/29/14 13:52	TN	TAL IRV
Total	Prep	1613			1053 mL	20 uL	4351027_P	12/17/14 23:30		TAL KNX
Total	Analysis	1613B		1			4351027	01/12/15 13:01	KBL	TAL KNX
Dissolved	Filtration	FILTRATION			250 mL	250 mL	226565	12/23/14 18:56	APS	TAL IRV
Dissolved	Prep	200.2			25 mL	25 mL	226697	12/24/14 09:43	ND	TAL IRV
Dissolved	Analysis	200.7 Rev 4.4		1	25 mL	25 mL	227313	12/30/14 09:52	VS	TAL IRV
Total Recoverable	Prep	200.2			25 mL	25 mL	226721	12/24/14 10:59	APS	TAL IRV
Total Recoverable	Analysis	200.7 Rev 4.4		1	25 mL	25 mL	226974	12/24/14 17:29	EN	TAL IRV
Total Recoverable	Prep	200.2			25 mL	25 mL	226721	12/24/14 10:59	APS	TAL IRV
Total Recoverable	Analysis	200.7 Rev 4.4		1	25 mL	25 mL	227114	12/29/14 13:35	EN	TAL IRV
Dissolved	Filtration	FILTRATION			250 mL	250 mL	226565	12/23/14 18:56	APS	TAL IRV
Dissolved	Prep	200.2			25 mL	25 mL	226703	12/24/14 09:59	ND	TAL IRV
Dissolved	Analysis	200.8		1	25 mL	25 mL	226988	12/24/14 17:19	NH	TAL IRV
Total Recoverable	Prep	200.2			25 mL	25 mL	226388	12/23/14 09:41	ND	TAL IRV
Total Recoverable	Analysis	200.8		1	25 mL	25 mL	226568	12/23/14 16:55	YS	TAL IRV
Dissolved	Filtration	FILTRATION			250 mL	250 mL	226565	12/23/14 18:56	APS	TAL IRV
Dissolved	Prep	245.1			20 mL	20 mL	226624	12/24/14 06:37	JS1	TAL IRV
Dissolved	Analysis	245.1		1	20 mL	20 mL	227057	12/24/14 15:27	DB	TAL IRV
Total/NA	Prep	245.1			20 mL	20 mL	225232	12/17/14 09:30	JS1	TAL IRV
Total/NA	Analysis	245.1		1	20 mL	20 mL	225520	12/17/14 17:34	DB	TAL IRV
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	225438	12/18/14 05:37	XL	TAL IRV
Total/NA	Analysis	SM 2540D		1	400 mL	1000 mL	225696	12/19/14 00:18	NTN	TAL IRV
Total/NA	Prep	Distill/CN			50 mL	50 mL	224778	12/15/14 15:08	BS	TAL IRV
Total/NA	Analysis	SM 4500 CN E		1	50 mL	50 mL	224827	12/15/14 17:51	BS	TAL IRV
Total/NA	Analysis	SM 4500 F C		1		25 mL	226150	12/22/14 09:26	MN	TAL IRV
Total/NA	Analysis	SM 4500 NH3 G		1	0.8 mL	8 mL	227890	01/02/15 16:50	BS	TAL IRV
Total/NA	Prep	Evaporation			200 mL	1.0 g	164748	12/22/14 10:58	MJS	TAL SL
Total/NA	Analysis	900.0		1	200 mL		166467	01/04/15 16:39	RTM	TAL SL
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	164475	12/19/14 11:41	MRB	TAL SL
Total/NA	Analysis	901.1		1	1000 mL		164814	12/22/14 15:30	SMP	TAL SL
Total/NA	Prep	PrecSep-21			500.28 g	1.0 g	164103	12/18/14 00:17	JH	TAL SL
Total/NA	Analysis	903.0		1	500.28 g		168078	01/13/15 07:19	RTM	TAL SL
Total/NA	Prep	PrecSep_0			501.98 mL	1.0 g	168188	01/13/15 12:50	LEM	TAL SL
Total/NA	Analysis	904.0		1	501.98 mL		168923	01/16/15 11:18	RTM	TAL SL
Total/NA	Prep	PrecSep-7			500.18 mL	1.0 g	165620	12/29/14 18:01	CMC	TAL SL
Total/NA	Analysis	905		1	500.18 mL		167123	01/07/15 15:56	RTM	TAL SL
Total/NA	Prep	LSC_Dist_Susp			100.25 mL	1.0 g	166399	01/02/15 09:02	JDL	TAL SL
Total/NA	Analysis	906.0		1	100.25 mL		166478	01/02/15 16:52	RTM	TAL SL
Total/NA	Prep	ExtChrom			100.14 mL	1.0 mL	165361	12/24/14 10:49	SCB	TAL SL
Total/NA	Analysis	A-01-R		1	100.14 mL		166363	12/31/14 14:22	MLK	TAL SL

TestAmerica Irvine

Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Client Sample ID: Trip_Blank_20141212

Lab Sample ID: 440-96606-2

Date Collected: 12/12/14 12:25

Matrix: Water

Date Received: 12/13/14 12:25

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 mL	1.0 g	164748	12/22/14 10:58	MJS	TAL SL
Total/NA	Analysis	900.0		1	200 mL		166467	01/04/15 16:40	RTM	TAL SL
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	164475	12/19/14 11:41	MRB	TAL SL
Total/NA	Analysis	901.1		1	1000 mL		164817	12/22/14 15:50	SMP	TAL SL
Total/NA	Prep	PrecSep-21			981.74 g	1.0 g	164103	12/18/14 00:17	JH	TAL SL
Total/NA	Analysis	903.0		1	981.74 g		168077	01/13/15 07:14	RTM	TAL SL
Total/NA	Prep	PrecSep_0			958.79 mL	1.0 g	168188	01/13/15 12:50	LEM	TAL SL
Total/NA	Analysis	904.0		1	958.79 mL		168923	01/16/15 11:18	RTM	TAL SL
Total/NA	Prep	PrecSep-7			992.78 mL	1.0 g	165620	12/29/14 18:01	CMC	TAL SL
Total/NA	Analysis	905		1	992.78 mL		167353	01/07/15 15:57	RTM	TAL SL
Total/NA	Prep	ExtChrom			499.25 mL	1.0 mL	165361	12/24/14 10:49	SCB	TAL SL
Total/NA	Analysis	A-01-R		1	499.25 mL		166364	12/31/14 14:22	MLK	TAL SL

Laboratory References:

- = . . .
- EMS Labs = EMS Laboratories Pasadena, CA, 117 West Bellevue Drive, Ste 3, Pasadena, CA 91105-2503
- SC0127 = Aquatic Testing Laboratories, 4350 Transport #107, Ventura, CA 93003
- TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022
- TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000
- TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: 624 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-224555/3

Matrix: Water

Analysis Batch: 224555

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2-Chloroethyl vinyl ether	ND		2.0	1.0	ug/L			12/14/14 10:48	1
Acrolein	ND		5.0	2.5	ug/L			12/14/14 10:48	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/14/14 10:48	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	111		80 - 128		12/14/14 10:48	1
Dibromofluoromethane (Surr)	93		76 - 132		12/14/14 10:48	1

Lab Sample ID: LCS 440-224555/4

Matrix: Water

Analysis Batch: 224555

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acrolein	25.0	23.5		ug/L		94	10 - 145
Acrylonitrile	250	249		ug/L		100	48 - 140

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	109		80 - 128
Dibromofluoromethane (Surr)	96		76 - 132

Lab Sample ID: LCSD 440-224555/5

Matrix: Water

Analysis Batch: 224555

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Acrolein	25.0	23.4		ug/L		94	10 - 145	0	30
Acrylonitrile	250	256		ug/L		102	48 - 140	3	30

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	107		80 - 128
Dibromofluoromethane (Surr)	95		76 - 132

Lab Sample ID: 550-36708-D-2 MS

Matrix: Water

Analysis Batch: 224555

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
Acrolein	ND		25.0	ND	LN	ug/L		0	10 - 147
Acrylonitrile	ND		250	240		ug/L		96	38 - 144

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	108		80 - 128
Dibromofluoromethane (Surr)	95		76 - 132

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-36708-D-2 MSD

Matrix: Water

Analysis Batch: 224555

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier								
2-Chloroethyl vinyl ether	ND		25.0	28.7		ug/L		115	10 - 140		9		25
Acrolein	ND		25.0	ND	LN	ug/L		0	10 - 147		NC		40
Acrylonitrile	ND		250	261		ug/L		104	38 - 144		8		40
MSD MSD													
Surrogate	%Recovery		Qualifier	Limits									
Toluene-d8 (Surr)	107			80 - 128									
Dibromofluoromethane (Surr)	95			76 - 132									

Lab Sample ID: MB 440-224609/6

Matrix: Water

Analysis Batch: 224609

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/15/14 10:02	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/15/14 10:02	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/15/14 10:02	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/15/14 10:02	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/15/14 10:02	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/15/14 10:02	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Benzene	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Bromoform	ND		1.0	0.40	ug/L			12/15/14 10:02	1
Bromomethane	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Chloroethane	ND		1.0	0.40	ug/L			12/15/14 10:02	1
Chloroform	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Chloromethane	ND		0.50	0.25	ug/L			12/15/14 10:02	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/15/14 10:02	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Toluene	ND		0.50	0.25	ug/L			12/15/14 10:02	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/15/14 10:02	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Trichloroethene	ND		0.50	0.25	ug/L			12/15/14 10:02	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/15/14 10:02	1
Xylenes, Total	ND		1.0	0.50	ug/L			12/15/14 10:02	1
MB MB									
Surrogate	%Recovery		Qualifier	Limits		Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	95			80 - 120			12/15/14 10:02	1	
Dibromofluoromethane (Surr)	87			76 - 132			12/15/14 10:02	1	
Toluene-d8 (Surr)	105			80 - 128			12/15/14 10:02	1	

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-224609/5

Matrix: Water

Analysis Batch: 224609

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	25.0	23.7		ug/L		95	70 - 130
1,1,2,2-Tetrachloroethane	25.0	24.8		ug/L		99	63 - 130
1,1,2-Trichloroethane	25.0	24.0		ug/L		96	70 - 130
1,1-Dichloroethane	25.0	25.1		ug/L		100	64 - 130
1,1-Dichloroethene	25.0	24.0		ug/L		96	70 - 130
1,2-Dichloroethane	25.0	22.5		ug/L		90	57 - 138
1,2-Dichloropropane	25.0	25.4		ug/L		102	67 - 130
Benzene	25.0	24.1		ug/L		96	68 - 130
Bromoform	25.0	21.3		ug/L		85	60 - 148
Bromomethane	25.0	23.4		ug/L		94	64 - 139
Carbon tetrachloride	25.0	23.9		ug/L		96	60 - 150
Chlorobenzene	25.0	23.4		ug/L		93	70 - 130
Dibromochloromethane	25.0	23.8		ug/L		95	69 - 145
Chloroethane	25.0	23.7		ug/L		95	64 - 135
Chloroform	25.0	23.8		ug/L		95	70 - 130
Chloromethane	25.0	26.2		ug/L		105	47 - 140
cis-1,3-Dichloropropene	25.0	24.4		ug/L		97	70 - 133
Bromodichloromethane	25.0	23.4		ug/L		94	70 - 132
Ethylbenzene	25.0	22.7		ug/L		91	70 - 130
Methylene Chloride	25.0	23.7		ug/L		95	52 - 130
Tetrachloroethene	25.0	24.0		ug/L		96	70 - 130
Toluene	25.0	22.6		ug/L		90	70 - 130
trans-1,2-Dichloroethene	25.0	26.2		ug/L		105	70 - 130
trans-1,3-Dichloropropene	25.0	26.0		ug/L		104	70 - 132
Trichlorofluoromethane	25.0	23.6		ug/L		94	60 - 150
Vinyl chloride	25.0	23.0		ug/L		92	59 - 133
Trichloroethene	25.0	24.0		ug/L		96	70 - 130
cis-1,2-Dichloroethene	25.0	23.7		ug/L		95	70 - 133
Xylenes, Total	50.0	48.2		ug/L		96	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		80 - 120
Dibromofluoromethane (Surr)	89		76 - 132
Toluene-d8 (Surr)	94		80 - 128

Lab Sample ID: 440-96455-D-3 MS

Matrix: Water

Analysis Batch: 224609

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
1,1,1-Trichloroethane	ND		25.0	24.5		ug/L		98	70 - 130
1,1,2,2-Tetrachloroethane	ND		25.0	25.8		ug/L		103	63 - 130
1,1,2-Trichloroethane	ND		25.0	26.8		ug/L		107	70 - 130
1,1-Dichloroethane	ND		25.0	25.7		ug/L		103	65 - 130
1,1-Dichloroethene	ND		25.0	24.7		ug/L		99	70 - 130
1,2-Dichloroethane	ND		25.0	23.3		ug/L		93	56 - 146
1,2-Dichloropropane	ND		25.0	25.8		ug/L		103	69 - 130
Benzene	ND		25.0	24.9		ug/L		99	66 - 130

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-96455-D-3 MS

Matrix: Water

Analysis Batch: 224609

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
Bromoform	ND		25.0	22.9		ug/L		92	59 - 150
Bromomethane	ND		25.0	22.5		ug/L		90	62 - 131
Carbon tetrachloride	ND		25.0	24.8		ug/L		99	60 - 150
Chlorobenzene	ND		25.0	25.3		ug/L		101	70 - 130
Dibromochloromethane	ND		25.0	25.9		ug/L		104	70 - 148
Chloroethane	ND		25.0	23.3		ug/L		93	68 - 130
Chloroform	ND		25.0	24.6		ug/L		98	70 - 130
Chloromethane	ND		25.0	24.2		ug/L		97	39 - 144
cis-1,3-Dichloropropene	ND		25.0	26.3		ug/L		105	70 - 133
Bromodichloromethane	ND		25.0	24.3		ug/L		97	70 - 138
Ethylbenzene	ND		25.0	25.1		ug/L		101	70 - 130
Methylene Chloride	ND		25.0	24.3		ug/L		97	52 - 130
Tetrachloroethene	ND		25.0	26.4		ug/L		106	70 - 137
Toluene	ND		25.0	24.6		ug/L		98	70 - 130
trans-1,2-Dichloroethene	ND		25.0	26.2		ug/L		105	70 - 130
trans-1,3-Dichloropropene	ND		25.0	27.6		ug/L		110	70 - 138
Trichlorofluoromethane	ND		25.0	23.9		ug/L		96	60 - 150
Vinyl chloride	ND		25.0	21.9		ug/L		88	50 - 137
Trichloroethene	ND		25.0	24.6		ug/L		98	70 - 130
cis-1,2-Dichloroethene	ND		25.0	24.2		ug/L		97	70 - 130
Xylenes, Total	ND		50.0	52.6		ug/L		105	70 - 133

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	95		80 - 120
Dibromofluoromethane (Surr)	89		76 - 132
Toluene-d8 (Surr)	100		80 - 128

Lab Sample ID: 440-96455-D-3 MSD

Matrix: Water

Analysis Batch: 224609

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
	Result	Qualifier	Added	Result	Qualifier						
1,1,1-Trichloroethane	ND		25.0	25.6		ug/L		102	70 - 130	4	20
1,1,1,2-Tetrachloroethane	ND		25.0	25.3		ug/L		101	63 - 130	2	30
1,1,2-Trichloroethane	ND		25.0	25.6		ug/L		102	70 - 130	5	25
1,1-Dichloroethane	ND		25.0	26.0		ug/L		104	65 - 130	1	20
1,1-Dichloroethene	ND		25.0	24.7		ug/L		99	70 - 130	0	20
1,2-Dichloroethane	ND		25.0	23.1		ug/L		92	56 - 146	1	20
1,2-Dichloropropane	ND		25.0	25.7		ug/L		103	69 - 130	0	20
Benzene	ND		25.0	24.9		ug/L		99	66 - 130	0	20
Bromoform	ND		25.0	22.7		ug/L		91	59 - 150	1	25
Bromomethane	ND		25.0	22.5		ug/L		90	62 - 131	0	25
Carbon tetrachloride	ND		25.0	25.7		ug/L		103	60 - 150	3	25
Chlorobenzene	ND		25.0	25.0		ug/L		100	70 - 130	1	20
Dibromochloromethane	ND		25.0	25.1		ug/L		100	70 - 148	3	25
Chloroethane	ND		25.0	23.8		ug/L		95	68 - 130	2	25
Chloroform	ND		25.0	24.6		ug/L		98	70 - 130	0	20
Chloromethane	ND		25.0	24.1		ug/L		96	39 - 144	0	25

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-96455-D-3 MSD

Matrix: Water

Analysis Batch: 224609

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
cis-1,3-Dichloropropene	ND		25.0	26.2		ug/L		105	70 - 133	0	20
Bromodichloromethane	ND		25.0	24.5		ug/L		98	70 - 138	0	20
Ethylbenzene	ND		25.0	24.7		ug/L		99	70 - 130	2	20
Methylene Chloride	ND		25.0	24.2		ug/L		97	52 - 130	0	20
Tetrachloroethene	ND		25.0	26.4		ug/L		106	70 - 137	0	20
Toluene	ND		25.0	24.2		ug/L		97	70 - 130	2	20
trans-1,2-Dichloroethene	ND		25.0	27.1		ug/L		108	70 - 130	3	20
trans-1,3-Dichloropropene	ND		25.0	27.1		ug/L		108	70 - 138	2	25
Trichlorofluoromethane	ND		25.0	24.3		ug/L		97	60 - 150	2	25
Vinyl chloride	ND		25.0	22.3		ug/L		89	50 - 137	2	30
Trichloroethene	ND		25.0	25.1		ug/L		100	70 - 130	2	20
cis-1,2-Dichloroethene	ND		25.0	24.3		ug/L		97	70 - 130	0	20
Xylenes, Total	ND		50.0	51.5		ug/L		103	70 - 133	2	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		80 - 120
Dibromofluoromethane (Surr)	90		76 - 132
Toluene-d8 (Surr)	99		80 - 128

Method: 525.2 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-224545/1-A

Matrix: Water

Analysis Batch: 224763

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 224545

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chlorpyrifos	ND		1.0	0.50	ug/L		12/13/14 15:30	12/15/14 15:14	1
Diazinon	ND		0.25	0.12	ug/L		12/13/14 15:30	12/15/14 15:14	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,3-Dimethyl-2-nitrobenzene	96		70 - 130	12/13/14 15:30	12/15/14 15:14	1
Perylene-d12	97		70 - 130	12/13/14 15:30	12/15/14 15:14	1
Triphenylphosphate	107		70 - 130	12/13/14 15:30	12/15/14 15:14	1

Lab Sample ID: LCS 440-224545/2-A

Matrix: Water

Analysis Batch: 224763

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 224545

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
Chlorpyrifos	5.00	5.56		ug/L		111	70 - 130
Diazinon	5.00	4.70		ug/L		94	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,3-Dimethyl-2-nitrobenzene	86		70 - 130
Perylene-d12	99		70 - 130
Triphenylphosphate	117		70 - 130

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 440-224545/3-A

Matrix: Water

Analysis Batch: 224763

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 224545

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorpyrifos	5.00	5.65		ug/L		113	70 - 130	2	30
Diazinon	5.00	4.53		ug/L		91	70 - 130	4	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,3-Dimethyl-2-nitrobenzene	97		70 - 130
Perylene-d12	102		70 - 130
Triphenylphosphate	113		70 - 130

Method: 625 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-224726/1-A

Matrix: Water

Analysis Batch: 226134

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 224726

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
Acenaphthylene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
Anthracene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
Benzidine	ND		10.0	5.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
Benzo[a]anthracene	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
Benzo[b]fluoranthene	ND		2.00	1.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
Benzo[k]fluoranthene	ND		0.500	0.250	ug/L		12/15/14 12:32	12/22/14 15:20	1
Benzo[a]pyrene	ND		2.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
Bis(2-chloroethoxy)methane	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
Bis(2-chloroethyl)ether	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
Bis(2-ethylhexyl) phthalate	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
4-Bromophenyl phenyl ether	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
Butyl benzyl phthalate	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
4-Chloro-3-methylphenol	ND		2.00	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
2-Chloronaphthalene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
2-Chlorophenol	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
4-Chlorophenyl phenyl ether	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
Chrysene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
Dibenz(a,h)anthracene	ND		0.500	0.250	ug/L		12/15/14 12:32	12/22/14 15:20	1
Di-n-butyl phthalate	ND		2.00	1.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
1,2-Dichlorobenzene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
1,3-Dichlorobenzene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
1,4-Dichlorobenzene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
3,3'-Dichlorobenzidine	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
2,4-Dichlorophenol	ND		2.00	1.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
Diethyl phthalate	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
2,4-Dimethylphenol	ND		2.00	1.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
Dimethyl phthalate	ND		0.500	0.250	ug/L		12/15/14 12:32	12/22/14 15:20	1
4,6-Dinitro-2-methylphenol	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
2,4-Dinitrophenol	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
2,4-Dinitrotoluene	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
2,6-Dinitrotoluene	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-224726/1-A
Matrix: Water
Analysis Batch: 226134

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 224726

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
Fluoranthene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
Fluorene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
Hexachlorobenzene	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
Hexachlorobutadiene	ND		2.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
Hexachloroethane	ND		3.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
Hexachlorocyclopentadiene	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
Indeno[1,2,3-cd]pyrene	ND		2.00	1.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
Isophorone	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
Naphthalene	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
Nitrobenzene	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
2-Nitrophenol	ND		2.00	1.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
4-Nitrophenol	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
N-Nitrosodimethylamine	ND		2.00	1.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
N-Nitrosodiphenylamine	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
N-Nitrosodi-n-propylamine	ND		2.00	1.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
Pentachlorophenol	ND		2.00	1.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
Phenanthrene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
Phenol	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
Pyrene	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1
1,2,4-Trichlorobenzene	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
2,4,6-Trichlorophenol	ND		1.00	0.500	ug/L		12/15/14 12:32	12/22/14 15:20	1
Benzo[g,h,i]perylene	ND		5.00	2.00	ug/L		12/15/14 12:32	12/22/14 15:20	1
bis (2-chloroisopropyl) ether	ND		0.500	0.200	ug/L		12/15/14 12:32	12/22/14 15:20	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	93		50 - 120	12/15/14 12:32	12/22/14 15:20	1
2-Fluorophenol	76		30 - 120	12/15/14 12:32	12/22/14 15:20	1
2,4,6-Tribromophenol	89		40 - 120	12/15/14 12:32	12/22/14 15:20	1
Nitrobenzene-d5	88		45 - 120	12/15/14 12:32	12/22/14 15:20	1
Terphenyl-d14	94		37 - 144	12/15/14 12:32	12/22/14 15:20	1
Phenol-d6	83		35 - 120	12/15/14 12:32	12/22/14 15:20	1

Lab Sample ID: LCS 440-224726/2-A
Matrix: Water
Analysis Batch: 226134

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 224726

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	10.0	7.925		ug/L		79	64 - 132
Acenaphthylene	10.0	8.054		ug/L		81	48 - 144
Anthracene	10.0	8.151		ug/L		82	45 - 128
Benzidine	10.0	ND		ug/L		23	5 - 66
Benzo[a]anthracene	10.0	8.466		ug/L		85	37 - 127
Benzo[b]fluoranthene	10.0	8.085		ug/L		81	10 - 150
Benzo[k]fluoranthene	10.0	7.938		ug/L		79	10 - 142
Benzo[a]pyrene	10.0	7.535		ug/L		75	10 - 150

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-224726/2-A

Matrix: Water

Analysis Batch: 226134

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 224726

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bis(2-chloroethoxy)methane	10.0	7.958		ug/L		80	10 - 150
Bis(2-chloroethyl)ether	10.0	7.865		ug/L		79	10 - 133
Bis(2-ethylhexyl) phthalate	10.0	7.862		ug/L		79	10 - 150
4-Bromophenyl phenyl ether	10.0	7.924		ug/L		79	31 - 124
Butyl benzyl phthalate	10.0	8.646		ug/L		86	10 - 135
4-Chloro-3-methylphenol	10.0	8.017		ug/L		80	10 - 150
2-Chloronaphthalene	10.0	7.212		ug/L		72	53 - 126
2-Chlorophenol	10.0	7.739		ug/L		77	10 - 150
4-Chlorophenyl phenyl ether	10.0	8.911		ug/L		89	37 - 150
Chrysene	10.0	8.615		ug/L		86	18 - 148
Dibenz(a,h)anthracene	10.0	9.411		ug/L		94	10 - 150
Di-n-butyl phthalate	10.0	8.645		ug/L		86	10 - 144
1,2-Dichlorobenzene	10.0	6.976		ug/L		70	25 - 141
1,3-Dichlorobenzene	10.0	6.825		ug/L		68	10 - 150
1,4-Dichlorobenzene	10.0	6.922		ug/L		69	10 - 108
3,3'-Dichlorobenzidine	10.0	4.741	J,DX	ug/L		47	10 - 77
2,4-Dichlorophenol	10.0	8.161		ug/L		82	12 - 150
Diethyl phthalate	10.0	9.505		ug/L		95	10 - 126
2,4-Dimethylphenol	10.0	7.205		ug/L		72	21 - 150
Dimethyl phthalate	10.0	8.806	LQ	ug/L		88	10 - 85
4,6-Dinitro-2-methylphenol	10.0	7.802		ug/L		78	10 - 150
2,4-Dinitrophenol	10.0	7.651		ug/L		77	10 - 150
2,4-Dinitrotoluene	10.0	8.969		ug/L		90	10 - 103
2,6-Dinitrotoluene	10.0	8.677		ug/L		87	29 - 111
Di-n-octyl phthalate	10.0	6.958		ug/L		70	10 - 150
1,2-Diphenylhydrazine(as Azobenzene)	10.0	8.118		ug/L		81	47 - 116
Fluoranthene	10.0	8.588		ug/L		86	44 - 140
Fluorene	10.0	8.688		ug/L		87	47 - 133
Hexachlorobenzene	10.0	7.746		ug/L		77	10 - 150
Hexachlorobutadiene	10.0	6.370		ug/L		64	10 - 111
Hexachloroethane	10.0	6.192		ug/L		62	18 - 111
Hexachlorocyclopentadiene	10.0	3.747	J,DX	ug/L		37	10 - 67
Indeno[1,2,3-cd]pyrene	10.0	8.808		ug/L		88	10 - 115
Isophorone	10.0	9.195		ug/L		92	18 - 150
Naphthalene	10.0	7.558		ug/L		76	41 - 142
Nitrobenzene	10.0	8.097		ug/L		81	22 - 135
2-Nitrophenol	10.0	7.960		ug/L		80	10 - 150
4-Nitrophenol	10.0	9.095		ug/L		91	10 - 150
N-Nitrosodimethylamine	10.0	7.511		ug/L		75	26 - 117
N-Nitrosodiphenylamine	10.0	7.787		ug/L		78	54 - 110
N-Nitrosodi-n-propylamine	10.0	7.573		ug/L		76	10 - 115
Pentachlorophenol	10.0	6.897		ug/L		69	10 - 150
Phenanthrene	10.0	8.417		ug/L		84	49 - 124
Phenol	10.0	8.272		ug/L		83	10 - 117
Pyrene	10.0	9.896		ug/L		99	45 - 120
1,2,4-Trichlorobenzene	10.0	7.326		ug/L		73	32 - 140
2,4,6-Trichlorophenol	10.0	7.929		ug/L		79	10 - 150

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-224726/2-A

Matrix: Water

Analysis Batch: 226134

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 224726

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[g,h,i]perylene	10.0	10.17		ug/L		102	10 - 150
bis (2-chloroisopropyl) ether	10.0	7.249		ug/L		72	47 - 103

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	74		50 - 120
2-Fluorophenol	69		30 - 120
2,4,6-Tribromophenol	87		40 - 120
Nitrobenzene-d5	82		45 - 120
Terphenyl-d14	101		37 - 144
Phenol-d6	76		35 - 120

Lab Sample ID: LCSD 440-224726/3-A

Matrix: Water

Analysis Batch: 226134

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 224726

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	10.0	7.874		ug/L		79	64 - 132	1	35
Acenaphthylene	10.0	8.015		ug/L		80	48 - 144	0	35
Anthracene	10.0	8.116		ug/L		81	45 - 128	0	35
Benzidine	10.0	ND		ug/L		18	5 - 66	24	35
Benzo[a]anthracene	10.0	8.356		ug/L		84	37 - 127	1	35
Benzo[b]fluoranthene	10.0	7.623		ug/L		76	10 - 150	6	35
Benzo[k]fluoranthene	10.0	7.413		ug/L		74	10 - 142	7	35
Benzo[a]pyrene	10.0	7.117		ug/L		71	10 - 150	6	35
Bis(2-chloroethoxy)methane	10.0	7.646		ug/L		76	10 - 150	4	35
Bis(2-chloroethyl)ether	10.0	7.760		ug/L		78	10 - 133	1	35
Bis(2-ethylhexyl) phthalate	10.0	8.552		ug/L		86	10 - 150	8	35
4-Bromophenyl phenyl ether	10.0	7.854		ug/L		79	31 - 124	1	35
Butyl benzyl phthalate	10.0	8.327		ug/L		83	10 - 135	4	35
4-Chloro-3-methylphenol	10.0	7.949		ug/L		79	10 - 150	1	35
2-Chloronaphthalene	10.0	6.992		ug/L		70	53 - 126	3	35
2-Chlorophenol	10.0	7.905		ug/L		79	10 - 150	2	35
4-Chlorophenyl phenyl ether	10.0	9.048		ug/L		90	37 - 150	2	35
Chrysene	10.0	8.492		ug/L		85	18 - 148	1	35
Dibenz(a,h)anthracene	10.0	9.670		ug/L		97	10 - 150	3	35
Di-n-butyl phthalate	10.0	8.662		ug/L		87	10 - 144	0	35
1,2-Dichlorobenzene	10.0	7.324		ug/L		73	25 - 141	5	35
1,3-Dichlorobenzene	10.0	6.903		ug/L		69	10 - 150	1	35
1,4-Dichlorobenzene	10.0	7.022		ug/L		70	10 - 108	1	35
3,3'-Dichlorobenzidine	10.0	5.295		ug/L		53	10 - 77	11	35
2,4-Dichlorophenol	10.0	7.902		ug/L		79	12 - 150	3	35
Diethyl phthalate	10.0	9.406		ug/L		94	10 - 126	1	35
2,4-Dimethylphenol	10.0	6.974		ug/L		70	21 - 150	3	35
Dimethyl phthalate	10.0	8.717	LQ	ug/L		87	10 - 85	1	35
4,6-Dinitro-2-methylphenol	10.0	8.325		ug/L		83	10 - 150	6	35
2,4-Dinitrophenol	10.0	8.703		ug/L		87	10 - 150	13	35
2,4-Dinitrotoluene	10.0	9.342		ug/L		93	10 - 103	4	35
2,6-Dinitrotoluene	10.0	9.174		ug/L		92	29 - 111	6	35

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 440-224726/3-A

Matrix: Water

Analysis Batch: 226134

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 224726

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits		RPD	
							RPD	Limit	RPD	Limit
Di-n-octyl phthalate	10.0	8.755		ug/L		88	10 - 150	23	35	
1,2-Diphenylhydrazine(as Azobenzene)	10.0	8.322		ug/L		83	47 - 116	2	35	
Fluoranthene	10.0	8.803		ug/L		88	44 - 140	2	35	
Fluorene	10.0	8.979		ug/L		90	47 - 133	3	35	
Hexachlorobenzene	10.0	7.708		ug/L		77	10 - 150	0	35	
Hexachlorobutadiene	10.0	6.492		ug/L		65	10 - 111	2	35	
Hexachloroethane	10.0	6.582		ug/L		66	18 - 111	6	35	
Hexachlorocyclopentadiene	10.0	3.634	J,DX	ug/L		36	10 - 67	3	35	
Indeno[1,2,3-cd]pyrene	10.0	10.01		ug/L		100	10 - 115	13	35	
Isophorone	10.0	8.480		ug/L		85	18 - 150	8	35	
Naphthalene	10.0	7.566		ug/L		76	41 - 142	0	35	
Nitrobenzene	10.0	8.167		ug/L		82	22 - 135	1	35	
2-Nitrophenol	10.0	8.160		ug/L		82	10 - 150	2	35	
4-Nitrophenol	10.0	9.370		ug/L		94	10 - 150	3	35	
N-Nitrosodimethylamine	10.0	7.570		ug/L		76	26 - 117	1	35	
N-Nitrosodiphenylamine	10.0	7.671		ug/L		77	54 - 110	2	35	
N-Nitrosodi-n-propylamine	10.0	7.186		ug/L		72	10 - 115	5	35	
Pentachlorophenol	10.0	8.519		ug/L		85	10 - 150	21	35	
Phenanthrene	10.0	8.214		ug/L		82	49 - 124	2	35	
Phenol	10.0	8.247		ug/L		82	10 - 117	0	35	
Pyrene	10.0	8.654		ug/L		87	45 - 120	13	35	
1,2,4-Trichlorobenzene	10.0	7.249		ug/L		72	32 - 140	1	35	
2,4,6-Trichlorophenol	10.0	7.373		ug/L		74	10 - 150	7	35	
Benzo[g,h,i]perylene	10.0	11.01		ug/L		110	10 - 150	8	35	
bis (2-chloroisopropyl) ether	10.0	7.270		ug/L		73	47 - 103	0	35	

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl	69		50 - 120
2-Fluorophenol	68		30 - 120
2,4,6-Tribromophenol	88		40 - 120
Nitrobenzene-d5	82		45 - 120
Terphenyl-d14	88		37 - 144
Phenol-d6	75		35 - 120

Method: 608 PCB LL - Polychlorinated Biphenyls (PCBs) Low level

Lab Sample ID: MB 440-225106/1-A

Matrix: Water

Analysis Batch: 225341

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 225106

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aroclor 1016	ND		0.50	0.25	ug/L		12/16/14 16:47	12/17/14 19:04	1
Aroclor 1221	ND		0.50	0.25	ug/L		12/16/14 16:47	12/17/14 19:04	1
Aroclor 1232	ND		0.50	0.25	ug/L		12/16/14 16:47	12/17/14 19:04	1
Aroclor 1242	ND		0.50	0.25	ug/L		12/16/14 16:47	12/17/14 19:04	1
Aroclor 1248	ND		0.50	0.25	ug/L		12/16/14 16:47	12/17/14 19:04	1
Aroclor 1254	ND		0.50	0.25	ug/L		12/16/14 16:47	12/17/14 19:04	1

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: 608 PCB LL - Polychlorinated Biphenyls (PCBs) Low level (Continued)

Lab Sample ID: MB 440-225106/1-A
Matrix: Water
Analysis Batch: 225341

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225106

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1260	ND		0.50	0.25	ug/L		12/16/14 16:47	12/17/14 19:04	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	63		29 - 115	12/16/14 16:47	12/17/14 19:04	1

Lab Sample ID: LCS 440-225106/4-A
Matrix: Water
Analysis Batch: 225341

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225106

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	4.00	3.13		ug/L		78	39 - 145
Aroclor 1260	4.00	3.20		ug/L		80	37 - 137

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	73		29 - 115

Lab Sample ID: LCSD 440-225106/5-A
Matrix: Water
Analysis Batch: 225341

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 225106

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aroclor 1016	4.00	3.03		ug/L		76	39 - 145	2	30
Aroclor 1260	4.00	3.11		ug/L		78	37 - 137	3	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	71		29 - 115

Method: 608 Pesticides - Organochlorine Pesticides Low level

Lab Sample ID: MB 440-225106/1-A
Matrix: Water
Analysis Batch: 225351

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225106

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0050	0.0015	ug/L		12/16/14 16:47	12/17/14 20:39	1
alpha-BHC	ND		0.0050	0.0025	ug/L		12/16/14 16:47	12/17/14 20:39	1
beta-BHC	ND		0.010	0.0040	ug/L		12/16/14 16:47	12/17/14 20:39	1
Chlordane (technical)	ND		0.10	0.080	ug/L		12/16/14 16:47	12/17/14 20:39	1
delta-BHC	ND		0.0050	0.0035	ug/L		12/16/14 16:47	12/17/14 20:39	1
Dieldrin	ND		0.0050	0.0020	ug/L		12/16/14 16:47	12/17/14 20:39	1
Endosulfan I	ND		0.0050	0.0030	ug/L		12/16/14 16:47	12/17/14 20:39	1
Endosulfan II	ND		0.0050	0.0020	ug/L		12/16/14 16:47	12/17/14 20:39	1
Endosulfan sulfate	ND		0.010	0.0030	ug/L		12/16/14 16:47	12/17/14 20:39	1
Endrin	ND		0.0050	0.0020	ug/L		12/16/14 16:47	12/17/14 20:39	1
Endrin aldehyde	ND		0.010	0.0020	ug/L		12/16/14 16:47	12/17/14 20:39	1
gamma-BHC (Lindane)	ND		0.010	0.0030	ug/L		12/16/14 16:47	12/17/14 20:39	1
Heptachlor	ND		0.010	0.0030	ug/L		12/16/14 16:47	12/17/14 20:39	1

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: 608 Pesticides - Organochlorine Pesticides Low level (Continued)

Lab Sample ID: MB 440-225106/1-A

Matrix: Water

Analysis Batch: 225351

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 225106

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor epoxide	ND		0.0050	0.0025	ug/L		12/16/14 16:47	12/17/14 20:39	1
Toxaphene	ND		0.50	0.25	ug/L		12/16/14 16:47	12/17/14 20:39	1
4,4'-DDD	ND		0.0050	0.0040	ug/L		12/16/14 16:47	12/17/14 20:39	1
4,4'-DDE	ND		0.0050	0.0030	ug/L		12/16/14 16:47	12/17/14 20:39	1
4,4'-DDT	ND		0.010	0.0040	ug/L		12/16/14 16:47	12/17/14 20:39	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	58		10 - 139	12/16/14 16:47	12/17/14 20:39	1

Lab Sample ID: LCS 440-225106/2-A

Matrix: Water

Analysis Batch: 225351

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 225106

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.250	0.129		ug/L		52	18 - 122
alpha-BHC	0.250	0.185		ug/L		74	32 - 128
beta-BHC	0.250	0.197		ug/L		79	29 - 123
delta-BHC	0.250	0.202		ug/L		81	33 - 135
Dieldrin	0.250	0.204		ug/L		82	32 - 139
Endosulfan I	0.250	0.189		ug/L		76	32 - 132
Endosulfan II	0.250	0.161		ug/L		64	35 - 130
Endosulfan sulfate	0.250	0.213		ug/L		85	34 - 141
Endrin	0.250	0.207		ug/L		83	33 - 135
Endrin aldehyde	0.250	0.192		ug/L		77	27 - 144
gamma-BHC (Lindane)	0.250	0.189		ug/L		76	32 - 129
Heptachlor	0.250	0.195		ug/L		78	30 - 133
Heptachlor epoxide	0.250	0.195		ug/L		78	25 - 142
4,4'-DDD	0.250	0.216		ug/L		86	37 - 142
4,4'-DDE	0.250	0.205		ug/L		82	33 - 139
4,4'-DDT	0.250	0.209		ug/L		84	36 - 145

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	69		10 - 139

Lab Sample ID: LCSD 440-225106/3-A

Matrix: Water

Analysis Batch: 225351

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 225106

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.250	0.140		ug/L		56	18 - 122	9	35
alpha-BHC	0.250	0.201		ug/L		80	32 - 128	8	35
beta-BHC	0.250	0.212		ug/L		85	29 - 123	5	35
delta-BHC	0.250	0.216		ug/L		87	33 - 135	7	35
Dieldrin	0.250	0.218		ug/L		87	32 - 139	7	35
Endosulfan I	0.250	0.203		ug/L		81	32 - 132	7	34
Endosulfan II	0.250	0.171		ug/L		68	35 - 130	6	35
Endosulfan sulfate	0.250	0.228		ug/L		91	34 - 141	7	35
Endrin	0.250	0.222		ug/L		89	33 - 135	7	35

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: 608 Pesticides - Organochlorine Pesticides Low level (Continued)

Lab Sample ID: LCSD 440-225106/3-A

Matrix: Water

Analysis Batch: 225351

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 225106

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Endrin aldehyde	0.250	0.206		ug/L		82	27 - 144	7	35
gamma-BHC (Lindane)	0.250	0.206		ug/L		83	32 - 129	9	35
Heptachlor	0.250	0.210		ug/L		84	30 - 133	7	35
Heptachlor epoxide	0.250	0.208		ug/L		83	25 - 142	7	35
4,4'-DDD	0.250	0.230		ug/L		92	37 - 142	6	35
4,4'-DDE	0.250	0.219		ug/L		88	33 - 139	4	35
4,4'-DDT	0.250	0.224		ug/L		90	36 - 145	7	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Tetrachloro-m-xylene	72		10 - 139

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 440-224245/3

Matrix: Water

Analysis Batch: 224245

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		1.0	0.25	ug/L			12/12/14 06:44	1

Lab Sample ID: LCS 440-224245/2

Matrix: Water

Analysis Batch: 224245

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	50.0	51.8		ug/L		104	90 - 110

Lab Sample ID: MRL 440-224245/4

Matrix: Water

Analysis Batch: 224245

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	1.00	1.18		ug/L		118	50 - 150

Lab Sample ID: 440-96479-1 MS

Matrix: Water

Analysis Batch: 224245

Client Sample ID: Outfall008_20141212_Grab

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	ND		50.0	51.6		ug/L		103	90 - 110

Lab Sample ID: 440-96479-1 MSD

Matrix: Water

Analysis Batch: 224245

Client Sample ID: Outfall008_20141212_Grab

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	ND		50.0	51.7		ug/L		103	90 - 110	0	10

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 440-224500/4
Matrix: Water
Analysis Batch: 224500

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		0.11	0.055	mg/L			12/13/14 09:16	1
Nitrite as N	ND		0.15	0.070	mg/L			12/13/14 09:16	1

Lab Sample ID: LCS 440-224500/6
Matrix: Water
Analysis Batch: 224500

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	1.13	1.13	LN	mg/L		100	90 - 110
Nitrite as N	1.52	1.51	LN	mg/L		99	90 - 110

Lab Sample ID: 440-96539-L-1 MS
Matrix: Water
Analysis Batch: 224500

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
Nitrate as N	ND		11.3	7.33	LN	mg/L		65	80 - 120
Nitrite as N	0.95	J,DX	15.2	10.2	LN	mg/L		61	80 - 120

Lab Sample ID: 440-96539-L-1 MSD
Matrix: Water
Analysis Batch: 224500

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
Nitrate as N	ND		11.3	7.22	LN	mg/L		64	80 - 120	2	20
Nitrite as N	0.95	J,DX	15.2	9.98	LN	mg/L		59	80 - 120	2	20

Lab Sample ID: MB 440-224501/4
Matrix: Water
Analysis Batch: 224501

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50	0.25	mg/L			12/13/14 09:16	1
Sulfate	ND		0.50	0.25	mg/L			12/13/14 09:16	1

Lab Sample ID: LCS 440-224501/6
Matrix: Water
Analysis Batch: 224501

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.00	5.11	LN	mg/L		102	90 - 110
Sulfate	5.00	4.88	LN	mg/L		98	90 - 110

Lab Sample ID: 440-96539-L-1 MS
Matrix: Water
Analysis Batch: 224501

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	60		50.0	92.6	LN	mg/L		65	80 - 120

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 440-96539-L-1 MS
Matrix: Water
Analysis Batch: 224501

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	6.0		50.0	34.2	LN	mg/L		56	80 - 120

Lab Sample ID: 440-96539-L-1 MSD
Matrix: Water
Analysis Batch: 224501

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	60		50.0	91.0	LN	mg/L		62	80 - 120	2	20
Sulfate	6.0		50.0	33.8	LN	mg/L		56	80 - 120	1	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 440-227034/8
Matrix: Water
Analysis Batch: 227034

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	0.95	ug/L			12/29/14 11:43	1

Lab Sample ID: LCS 440-227034/7
Matrix: Water
Analysis Batch: 227034

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: MRL 440-227034/5
Matrix: Water
Analysis Batch: 227034

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	4.00	3.98	J,DX	ug/L		100	75 - 125

Lab Sample ID: 440-97367-A-2 MS
Matrix: Water
Analysis Batch: 227034

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		25.0	26.3		ug/L		105	80 - 120

Lab Sample ID: 440-97367-A-2 MSD
Matrix: Water
Analysis Batch: 227034

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		25.0	26.4		ug/L		106	80 - 120	1	20

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

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

Lab Sample ID: H4L17000027B
Matrix: Water
Analysis Batch: 4351027

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 4351027_P

Analyte	MB Result	MB Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000100	0.00000589	ug/L		12/17/14 23:30	01/10/15 05:43	1
Total TCDD	ND		0.0000100	0.00000589	ug/L		12/17/14 23:30	01/10/15 05:43	1
1,2,3,7,8-PeCDD	ND		0.0000500	0.00000301	ug/L		12/17/14 23:30	01/10/15 05:43	1
Total PeCDD	ND		0.0000500	0.00000301	ug/L		12/17/14 23:30	01/10/15 05:43	1
1,2,3,4,7,8-HxCDD	ND		0.0000500	0.00000263	ug/L		12/17/14 23:30	01/10/15 05:43	1
1,2,3,6,7,8-HxCDD	ND		0.0000500	0.00000268	ug/L		12/17/14 23:30	01/10/15 05:43	1
1,2,3,7,8,9-HxCDD	ND		0.0000500	0.00000247	ug/L		12/17/14 23:30	01/10/15 05:43	1
Total HxCDD	ND		0.0000500	0.00000259	ug/L		12/17/14 23:30	01/10/15 05:43	1
1,2,3,4,6,7,8-HpCDD	ND		0.0000500	0.00000302	ug/L		12/17/14 23:30	01/10/15 05:43	1
Total HpCDD	ND		0.0000500	0.00000302	ug/L		12/17/14 23:30	01/10/15 05:43	1
OCDD	0.0000276	J	0.000100	0.00000427	ug/L		12/17/14 23:30	01/10/15 05:43	1
2,3,7,8-TCDF	ND		0.0000100	0.00000442	ug/L		12/17/14 23:30	01/10/15 05:43	1
Total TCDF	ND		0.0000100	0.00000442	ug/L		12/17/14 23:30	01/10/15 05:43	1
1,2,3,7,8-PeCDF	ND		0.0000500	0.00000249	ug/L		12/17/14 23:30	01/10/15 05:43	1
2,3,4,7,8-PeCDF	ND		0.0000500	0.00000223	ug/L		12/17/14 23:30	01/10/15 05:43	1
Total PeCDF	ND		0.0000500	0.00000235	ug/L		12/17/14 23:30	01/10/15 05:43	1
1,2,3,4,7,8-HxCDF	ND		0.0000500	0.00000157	ug/L		12/17/14 23:30	01/10/15 05:43	1
1,2,3,6,7,8-HxCDF	ND		0.0000500	0.00000170	ug/L		12/17/14 23:30	01/10/15 05:43	1
2,3,4,6,7,8-HxCDF	ND		0.0000500	0.00000148	ug/L		12/17/14 23:30	01/10/15 05:43	1
1,2,3,7,8,9-HxCDF	ND		0.0000500	0.00000202	ug/L		12/17/14 23:30	01/10/15 05:43	1
Total HxCDF	ND		0.0000500	0.00000167	ug/L		12/17/14 23:30	01/10/15 05:43	1
1,2,3,4,6,7,8-HpCDF	ND		0.0000500	0.00000229	ug/L		12/17/14 23:30	01/10/15 05:43	1
1,2,3,4,7,8,9-HpCDF	ND		0.0000500	0.00000302	ug/L		12/17/14 23:30	01/10/15 05:43	1
Total HpCDF	ND		0.0000500	0.00000261	ug/L		12/17/14 23:30	01/10/15 05:43	1
OCDF	ND		0.000100	0.00000307	ug/L		12/17/14 23:30	01/10/15 05:43	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	104		35 - 197	12/17/14 23:30	01/10/15 05:43	1

Internal Standard	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	92		25 - 164	12/17/14 23:30	01/10/15 05:43	1
13C-1,2,3,7,8-PeCDD	87		25 - 181	12/17/14 23:30	01/10/15 05:43	1
13C-1,2,3,4,7,8-HxCDD	92		32 - 141	12/17/14 23:30	01/10/15 05:43	1
13C-1,2,3,6,7,8-HxCDD	94		28 - 130	12/17/14 23:30	01/10/15 05:43	1
13C-1,2,3,4,6,7,8-HpCDD	93		23 - 140	12/17/14 23:30	01/10/15 05:43	1
13C-OCDD	96		17 - 157	12/17/14 23:30	01/10/15 05:43	1
13C-2,3,7,8-TCDF	77		24 - 169	12/17/14 23:30	01/10/15 05:43	1
13C-1,2,3,7,8-PeCDF	80		24 - 185	12/17/14 23:30	01/10/15 05:43	1
13C-2,3,4,7,8-PeCDF	78		21 - 178	12/17/14 23:30	01/10/15 05:43	1
13C-1,2,3,4,7,8-HxCDF	72		26 - 152	12/17/14 23:30	01/10/15 05:43	1
13C-1,2,3,6,7,8-HxCDF	75		26 - 123	12/17/14 23:30	01/10/15 05:43	1
13C-2,3,4,6,7,8-HxCDF	84		28 - 136	12/17/14 23:30	01/10/15 05:43	1
13C-1,2,3,7,8,9-HxCDF	79		29 - 147	12/17/14 23:30	01/10/15 05:43	1
13C-1,2,3,4,6,7,8-HpCDF	79		28 - 143	12/17/14 23:30	01/10/15 05:43	1
13C-1,2,3,4,7,8,9-HpCDF	86		26 - 138	12/17/14 23:30	01/10/15 05:43	1
13C-OCDF	93		17 - 157	12/17/14 23:30	01/10/15 05:43	1

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

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

Lab Sample ID: H4L170000027C

Matrix: Water

Analysis Batch: 4351027

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 4351027_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2,3,7,8-TCDD	0.000200	0.000200		ug/L		100	67 - 158
1,2,3,7,8-PeCDD	0.00100	0.00100		ug/L		100	70 - 142
1,2,3,4,7,8-HxCDD	0.00100	0.000953		ug/L		95	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000949		ug/L		95	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000976		ug/L		98	64 - 162
1,2,3,4,6,7,8-HpCDD	0.00100	0.000934		ug/L		93	70 - 140
OCDD	0.00200	0.00179	B	ug/L		90	78 - 144
2,3,7,8-TCDF	0.000200	0.000200		ug/L		100	75 - 158
1,2,3,7,8-PeCDF	0.00100	0.000912		ug/L		91	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000949		ug/L		95	68 - 160
1,2,3,4,7,8-HxCDF	0.00100	0.000952		ug/L		95	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000956		ug/L		96	84 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000946		ug/L		95	70 - 156
1,2,3,7,8,9-HxCDF	0.00100	0.000936		ug/L		94	78 - 130
1,2,3,4,6,7,8-HpCDF	0.00100	0.000924		ug/L		92	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000951		ug/L		95	78 - 138
OCDF	0.00200	0.00187		ug/L		93	63 - 170

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	105		31 - 191

Internal Standard	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	91		20 - 175
13C-1,2,3,7,8-PeCDD	95		21 - 227
13C-1,2,3,4,7,8-HxCDD	93		21 - 193
13C-1,2,3,6,7,8-HxCDD	88		25 - 163
13C-1,2,3,4,6,7,8-HpCDD	90		26 - 166
13C-OCDD	91		13 - 199
13C-2,3,7,8-TCDF	83		22 - 152
13C-1,2,3,7,8-PeCDF	88		21 - 192
13C-2,3,4,7,8-PeCDF	85		13 - 328
13C-1,2,3,4,7,8-HxCDF	78		19 - 202
13C-1,2,3,6,7,8-HxCDF	79		21 - 159
13C-2,3,4,6,7,8-HxCDF	84		22 - 176
13C-1,2,3,7,8,9-HxCDF	85		17 - 205
13C-1,2,3,4,6,7,8-HpCDF	80		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	83		20 - 186
13C-OCDF	83		13 - 199

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 440-226721/1-A

Matrix: Water

Analysis Batch: 226974

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 226721

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		50	25	ug/L		12/24/14 10:59	12/24/14 17:12	1

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

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

Lab Sample ID: MB 440-226721/1-A
Matrix: Water
Analysis Batch: 226974

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 226721

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Boron	ND		0.050	0.010	mg/L		12/24/14 10:59	12/24/14 17:12	1
Beryllium	ND		2.0	1.0	ug/L		12/24/14 10:59	12/24/14 17:12	1
Chromium	ND		5.0	2.5	ug/L		12/24/14 10:59	12/24/14 17:12	1
Iron	0.0134	J,DX	0.040	0.010	mg/L		12/24/14 10:59	12/24/14 17:12	1
Nickel	ND		10	5.0	ug/L		12/24/14 10:59	12/24/14 17:12	1
Vanadium	ND		10	5.0	ug/L		12/24/14 10:59	12/24/14 17:12	1
Zinc	ND		20	10	ug/L		12/24/14 10:59	12/24/14 17:12	1
Silver	ND		10	5.0	ug/L		12/24/14 10:59	12/24/14 17:12	1
Hardness, as CaCO3	ND		0.33	0.17	mg/L		12/24/14 10:59	12/24/14 17:12	1

Lab Sample ID: MB 440-226721/1-A
Matrix: Water
Analysis Batch: 227114

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 226721

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		10	5.0	ug/L		12/24/14 10:59	12/29/14 13:20	1

Lab Sample ID: LCS 440-226721/2-A
Matrix: Water
Analysis Batch: 226974

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 226721

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
Aluminum	500	477		ug/L		95	85 - 115	
Boron	0.500	0.497		mg/L		99	85 - 115	
Beryllium	500	493		ug/L		99	85 - 115	
Chromium	500	500		ug/L		100	85 - 115	
Iron	0.500	0.497		mg/L		99	85 - 115	
Nickel	500	507		ug/L		101	85 - 115	
Vanadium	500	499		ug/L		100	85 - 115	
Zinc	500	498		ug/L		100	85 - 115	
Silver	250	246		ug/L		99	85 - 115	

Lab Sample ID: LCS 440-226721/2-A
Matrix: Water
Analysis Batch: 227114

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 226721

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
Arsenic	500	499		ug/L		100	85 - 115	

Lab Sample ID: 440-96646-A-1-B MS
Matrix: Water
Analysis Batch: 226974

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 226721

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	
Aluminum	230		500	736		ug/L		101	70 - 130	
Boron	ND		0.500	0.482		mg/L		96	70 - 130	
Beryllium	ND		500	482		ug/L		96	70 - 130	
Chromium	ND		500	498		ug/L		100	70 - 130	
Iron	0.30	MB	0.500	0.787		mg/L		98	70 - 130	

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

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

Lab Sample ID: 440-96646-A-1-B MS
Matrix: Water
Analysis Batch: 226974

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 226721

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
Nickel	ND		500	492		ug/L		98	70 - 130
Vanadium	ND		500	490		ug/L		98	70 - 130
Zinc	140		500	620		ug/L		96	70 - 130
Silver	ND		250	241		ug/L		97	70 - 130

Lab Sample ID: 440-96646-A-1-B MS
Matrix: Water
Analysis Batch: 227114

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 226721

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
Arsenic	ND		500	501		ug/L		100	70 - 130

Lab Sample ID: 440-96646-A-1-C MSD
Matrix: Water
Analysis Batch: 226974

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 226721

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
	Result	Qualifier	Added	Result	Qualifier						
Aluminum	230		500	729		ug/L		99	70 - 130	1	20
Boron	ND		0.500	0.484		mg/L		97	70 - 130	1	20
Beryllium	ND		500	480		ug/L		96	70 - 130	0	20
Chromium	ND		500	493		ug/L		99	70 - 130	1	20
Iron	0.30	MB	0.500	0.780		mg/L		97	70 - 130	1	20
Nickel	ND		500	493		ug/L		99	70 - 130	0	20
Vanadium	ND		500	489		ug/L		98	70 - 130	0	20
Zinc	140		500	619		ug/L		96	70 - 130	0	20
Silver	ND		250	242		ug/L		97	70 - 130	0	20

Lab Sample ID: 440-96646-A-1-C MSD
Matrix: Water
Analysis Batch: 227114

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 226721

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
	Result	Qualifier	Added	Result	Qualifier						
Arsenic	ND		500	503		ug/L		101	70 - 130	0	20

Lab Sample ID: MB 440-226565/1-C
Matrix: Water
Analysis Batch: 227313

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 226697

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aluminum	ND		50	25	ug/L		12/24/14 09:43	12/30/14 09:39	1
Arsenic	ND		10	5.0	ug/L		12/24/14 09:43	12/30/14 09:39	1
Boron	ND		0.050	0.010	mg/L		12/24/14 09:43	12/30/14 09:39	1
Beryllium	ND		2.0	1.0	ug/L		12/24/14 09:43	12/30/14 09:39	1
Chromium	ND		5.0	2.5	ug/L		12/24/14 09:43	12/30/14 09:39	1
Iron	ND		0.040	0.010	mg/L		12/24/14 09:43	12/30/14 09:39	1
Nickel	ND		10	5.0	ug/L		12/24/14 09:43	12/30/14 09:39	1
Vanadium	ND		10	5.0	ug/L		12/24/14 09:43	12/30/14 09:39	1
Zinc	ND		20	10	ug/L		12/24/14 09:43	12/30/14 09:39	1
Silver	ND		10	5.0	ug/L		12/24/14 09:43	12/30/14 09:39	1

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

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

Lab Sample ID: MB 440-226565/1-C
Matrix: Water
Analysis Batch: 227313

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 226697

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness, as CaCO3	ND		0.33	0.17	mg/L		12/24/14 09:43	12/30/14 09:39	1

Lab Sample ID: LCS 440-226565/2-C
Matrix: Water
Analysis Batch: 227313

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 226697

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
Aluminum	500	478		ug/L		96	85 - 115	
Arsenic	500	499		ug/L		100	85 - 115	
Boron	0.500	0.501		mg/L		100	85 - 115	
Beryllium	500	488		ug/L		98	85 - 115	
Chromium	500	471		ug/L		94	85 - 115	
Iron	0.500	0.487		mg/L		97	85 - 115	
Nickel	500	509		ug/L		102	85 - 115	
Vanadium	500	507		ug/L		101	85 - 115	
Zinc	500	491		ug/L		98	85 - 115	
Silver	250	223		ug/L		89	85 - 115	

Lab Sample ID: 440-96594-Q-1-I MS
Matrix: Water
Analysis Batch: 227313

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 226697

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	
Aluminum	38	QP	500	552		ug/L		103	70 - 130	
Arsenic	ND	QP	500	509		ug/L		102	70 - 130	
Boron	0.061	QP	0.500	0.581		mg/L		104	70 - 130	
Beryllium	ND	QP	500	507		ug/L		101	70 - 130	
Chromium	ND	QP	500	481		ug/L		96	70 - 130	
Iron	0.050	QP	0.500	0.546		mg/L		99	70 - 130	
Nickel	ND	QP	500	519		ug/L		104	70 - 130	
Vanadium	ND	QP	500	525		ug/L		105	70 - 130	
Zinc	ND	QP	500	512		ug/L		102	70 - 130	
Silver	ND	QP	250	256		ug/L		102	70 - 130	

Lab Sample ID: 440-96594-Q-1-J MSD
Matrix: Water
Analysis Batch: 227313

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 226697

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits		RPD	
											RPD	Limit
Aluminum	38	QP	500	545		ug/L		101	70 - 130	1	20	
Arsenic	ND	QP	500	504		ug/L		101	70 - 130	1	20	
Boron	0.061	QP	0.500	0.576		mg/L		103	70 - 130	1	20	
Beryllium	ND	QP	500	499		ug/L		100	70 - 130	2	20	
Chromium	ND	QP	500	476		ug/L		95	70 - 130	1	20	
Iron	0.050	QP	0.500	0.547		mg/L		99	70 - 130	0	20	
Nickel	ND	QP	500	514		ug/L		103	70 - 130	1	20	
Vanadium	ND	QP	500	520		ug/L		104	70 - 130	1	20	
Zinc	ND	QP	500	508		ug/L		102	70 - 130	1	20	
Silver	ND	QP	250	253		ug/L		101	70 - 130	1	20	

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 440-226388/1-A
Matrix: Water
Analysis Batch: 226568

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 226388

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.25	ug/L		12/23/14 09:41	12/23/14 16:39	1
Copper	ND		2.0	0.50	ug/L		12/23/14 09:41	12/23/14 16:39	1
Lead	ND		1.0	0.50	ug/L		12/23/14 09:41	12/23/14 16:39	1
Antimony	ND		2.0	0.50	ug/L		12/23/14 09:41	12/23/14 16:39	1
Selenium	ND		2.0	0.50	ug/L		12/23/14 09:41	12/23/14 16:39	1
Thallium	ND		1.0	0.50	ug/L		12/23/14 09:41	12/23/14 16:39	1

Lab Sample ID: LCS 440-226388/2-A
Matrix: Water
Analysis Batch: 226568

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 226388

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	80.0	81.6		ug/L		102	85 - 115
Copper	80.0	81.6		ug/L		102	85 - 115
Lead	80.0	81.4		ug/L		102	85 - 115
Antimony	80.0	83.9		ug/L		105	85 - 115
Selenium	80.0	80.6		ug/L		101	85 - 115
Thallium	80.0	78.7		ug/L		98	85 - 115

Lab Sample ID: LCSD 440-226388/3-A
Matrix: Water
Analysis Batch: 226568

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 226388

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	80.0	82.0		ug/L		103	85 - 115	1	20
Copper	80.0	81.3		ug/L		102	85 - 115	0	20
Lead	80.0	82.7		ug/L		103	85 - 115	2	20
Antimony	80.0	84.4		ug/L		106	85 - 115	1	20
Selenium	80.0	82.7		ug/L		103	85 - 115	3	20
Thallium	80.0	81.8		ug/L		102	85 - 115	4	20

Lab Sample ID: 440-96605-A-1-C MS
Matrix: Water
Analysis Batch: 226568

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 226388

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.31	J,DX	80.0	81.9		ug/L		102	70 - 130
Copper	9.0		80.0	85.8		ug/L		96	70 - 130
Lead	8.8		80.0	91.8		ug/L		104	70 - 130
Antimony	0.74	J,DX	80.0	80.6		ug/L		100	70 - 130
Selenium	ND		80.0	77.5		ug/L		97	70 - 130
Thallium	ND		80.0	81.4		ug/L		102	70 - 130

Lab Sample ID: 440-96605-A-1-D MSD
Matrix: Water
Analysis Batch: 226568

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 226388

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	0.31	J,DX	80.0	82.9		ug/L		103	70 - 130	1	20

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

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

Lab Sample ID: 440-96605-A-1-D MSD

Matrix: Water

Analysis Batch: 226568

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total Recoverable

Prep Batch: 226388

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Copper	9.0		80.0	88.3		ug/L		99	70 - 130	3	20
Lead	8.8		80.0	93.3		ug/L		106	70 - 130	2	20
Antimony	0.74	J,DX	80.0	81.2		ug/L		101	70 - 130	1	20
Selenium	ND		80.0	78.5		ug/L		98	70 - 130	1	20
Thallium	ND		80.0	81.6		ug/L		102	70 - 130	0	20

Lab Sample ID: MB 440-226565/1-D

Matrix: Water

Analysis Batch: 226988

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 226703

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cadmium	ND		1.0	0.25	ug/L		12/24/14 09:59	12/24/14 16:39	1
Copper	ND		2.0	0.50	ug/L		12/24/14 09:59	12/24/14 16:39	1
Lead	ND		1.0	0.50	ug/L		12/24/14 09:59	12/24/14 16:39	1
Antimony	ND		2.0	0.50	ug/L		12/24/14 09:59	12/24/14 16:39	1
Selenium	ND		2.0	0.50	ug/L		12/24/14 09:59	12/24/14 16:39	1
Thallium	ND		1.0	0.50	ug/L		12/24/14 09:59	12/24/14 16:39	1

Lab Sample ID: LCS 440-226565/2-D

Matrix: Water

Analysis Batch: 226988

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Prep Batch: 226703

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
							Added
Cadmium	80.0	79.5		ug/L		99	85 - 115
Copper	80.0	83.3		ug/L		104	85 - 115
Lead	80.0	79.3		ug/L		99	85 - 115
Antimony	80.0	82.1		ug/L		103	85 - 115
Selenium	80.0	76.4		ug/L		95	85 - 115
Thallium	80.0	77.0		ug/L		96	85 - 115

Lab Sample ID: LCSD 440-226565/3-B

Matrix: Water

Analysis Batch: 226988

Client Sample ID: Lab Control Sample Dup

Prep Type: Dissolved

Prep Batch: 226703

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	%Rec.	RPD	Limit
							Added		
Cadmium	80.0	81.2		ug/L		101	85 - 115	2	20
Copper	80.0	83.7		ug/L		105	85 - 115	0	20
Lead	80.0	80.4		ug/L		100	85 - 115	1	20
Antimony	80.0	83.2		ug/L		104	85 - 115	1	20
Selenium	80.0	78.2		ug/L		98	85 - 115	2	20
Thallium	80.0	77.5		ug/L		97	85 - 115	1	20

Lab Sample ID: 440-96606-1 MS

Matrix: Water

Analysis Batch: 226988

Client Sample ID: Outfall008_20141212_Comp

Prep Type: Dissolved

Prep Batch: 226703

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				Limits
Cadmium	ND	QP	80.0	80.2		ug/L		100	70 - 130
Copper	3.2	QP	80.0	84.0		ug/L		101	70 - 130

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

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

Lab Sample ID: 440-96606-1 MS
Matrix: Water
Analysis Batch: 226988

Client Sample ID: Outfall008_20141212_Comp
Prep Type: Dissolved
Prep Batch: 226703

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	ND	QP	80.0	80.5		ug/L		101	70 - 130
Antimony	ND	QP	80.0	83.4		ug/L		104	70 - 130
Selenium	ND	QP	80.0	78.8		ug/L		98	70 - 130
Thallium	ND	QP	80.0	79.0		ug/L		99	70 - 130

Lab Sample ID: 440-96606-1 MSD
Matrix: Water
Analysis Batch: 226988

Client Sample ID: Outfall008_20141212_Comp
Prep Type: Dissolved
Prep Batch: 226703

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	ND	QP	80.0	79.8		ug/L		100	70 - 130	1	20
Copper	3.2	QP	80.0	83.7		ug/L		101	70 - 130	0	20
Lead	ND	QP	80.0	80.1		ug/L		100	70 - 130	1	20
Antimony	ND	QP	80.0	81.8		ug/L		102	70 - 130	2	20
Selenium	ND	QP	80.0	76.1		ug/L		95	70 - 130	3	20
Thallium	ND	QP	80.0	76.4		ug/L		96	70 - 130	3	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 440-225232/1-A
Matrix: Water
Analysis Batch: 225520

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225232

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		12/17/14 09:30	12/17/14 17:17	1

Lab Sample ID: LCS 440-225232/2-A
Matrix: Water
Analysis Batch: 225520

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225232

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	8.00	8.12		ug/L		102	85 - 115

Lab Sample ID: 440-96890-D-1-B MS
Matrix: Water
Analysis Batch: 225520

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 225232

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		8.00	8.03		ug/L		100	70 - 130

Lab Sample ID: 440-96890-D-1-C MSD
Matrix: Water
Analysis Batch: 225520

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 225232

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		8.00	8.32		ug/L		104	70 - 130	4	20

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: MB 440-226565/1-B
 Matrix: Water
 Analysis Batch: 227057

Client Sample ID: Method Blank
 Prep Type: Dissolved
 Prep Batch: 226624

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	IB	0.20	0.10	ug/L		12/24/14 06:37	12/24/14 15:22	1

Lab Sample ID: LCS 440-226565/2-B
 Matrix: Water
 Analysis Batch: 227057

Client Sample ID: Lab Control Sample
 Prep Type: Dissolved
 Prep Batch: 226624

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	8.00	10.0	LQ IB	ug/L		125	85 - 115

Lab Sample ID: 440-96606-1 MS
 Matrix: Water
 Analysis Batch: 227057

Client Sample ID: Outfall008_20141212_Comp
 Prep Type: Dissolved
 Prep Batch: 226624

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND	LQ IB	8.00	10.2	IB	ug/L		128	70 - 130

Lab Sample ID: 440-96606-1 MSD
 Matrix: Water
 Analysis Batch: 227057

Client Sample ID: Outfall008_20141212_Comp
 Prep Type: Dissolved
 Prep Batch: 226624

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND	LQ IB	8.00	10.0	IB	ug/L		126	70 - 130	2	20

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 440-226034/1-A
 Matrix: Water
 Analysis Batch: 226039

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 226034

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		5.0	1.4	mg/L		12/21/14 14:30	12/21/14 17:01	1

Lab Sample ID: LCS 440-226034/2-A
 Matrix: Water
 Analysis Batch: 226039

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 226034

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	20.0	18.5		mg/L		93	78 - 114

Lab Sample ID: LCSD 440-226034/3-A
 Matrix: Water
 Analysis Batch: 226039

Client Sample ID: Lab Control Sample Dup
 Prep Type: Total/NA
 Prep Batch: 226034

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
HEM	20.0	19.0		mg/L		95	78 - 114	3	11

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

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

Lab Sample ID: MB 440-225438/1
Matrix: Water
Analysis Batch: 225438

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	5.0	mg/L			12/18/14 05:37	1

Lab Sample ID: LCS 440-225438/2
Matrix: Water
Analysis Batch: 225438

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	90 - 110

Lab Sample ID: 440-96606-1 DU
Matrix: Water
Analysis Batch: 225438

Client Sample ID: Outfall008_20141212_Comp
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	120		120		mg/L		2	5

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

Lab Sample ID: MB 440-225696/2
Matrix: Water
Analysis Batch: 225696

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	0.50	mg/L			12/19/14 00:18	1

Lab Sample ID: LCS 440-225696/1
Matrix: Water
Analysis Batch: 225696

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	1000	1000		mg/L		100	85 - 115

Lab Sample ID: 440-96493-C-1 DU
Matrix: Water
Analysis Batch: 225696

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	390		404		mg/L		4	10

Method: SM 4500 CN E - Cyanide, Total (Low Level)

Lab Sample ID: MB 440-224778/1-A
Matrix: Water
Analysis Batch: 224827

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 224778

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L		12/15/14 15:08	12/15/14 17:50	1

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: SM 4500 CN E - Cyanide, Total (Low Level) (Continued)

Lab Sample ID: LCS 440-224778/2-A
Matrix: Water
Analysis Batch: 224827

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 224778

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	100	99.8		ug/L		100	90 - 110

Lab Sample ID: LCSD 440-224778/3-A
Matrix: Water
Analysis Batch: 224827

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 224778

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	100	99.0		ug/L		99	90 - 110	1	10

Lab Sample ID: 440-96113-A-5-B MS
Matrix: Water
Analysis Batch: 224827

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 224778

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	ND		100	2.54	J,DX LN	ug/L		3	70 - 115

Lab Sample ID: 440-96113-A-5-C MSD
Matrix: Water
Analysis Batch: 224827

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 224778

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	ND		100	ND	LN	ug/L		0	70 - 115	NC	15

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 440-226150/10
Matrix: Water
Analysis Batch: 226150

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	0.050	mg/L			12/22/14 09:23	1

Lab Sample ID: LCS 440-226150/9
Matrix: Water
Analysis Batch: 226150

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.00	1.02		mg/L		102	90 - 110

Lab Sample ID: 440-96708-F-1 MS
Matrix: Water
Analysis Batch: 226150

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
Fluoride	0.20		1.00	1.21		mg/L		101	80 - 120

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: 440-96708-F-1 MSD

Matrix: Water

Analysis Batch: 226150

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
Fluoride	0.20		1.00	1.21		mg/L		101	80 - 120	0	20

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 440-227890/9

Matrix: Water

Analysis Batch: 227890

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.200	0.100	mg/L			01/02/15 16:23	1

Lab Sample ID: LCS 440-227890/10

Matrix: Water

Analysis Batch: 227890

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	5.01	5.030		mg/L		100	90 - 110

Lab Sample ID: 440-98014-W-23 MS

Matrix: Water

Analysis Batch: 227890

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
Ammonia (as N)	1.89		5.01	8.380	LM	mg/L		130	90 - 110

Lab Sample ID: 440-98014-W-23 MSD

Matrix: Water

Analysis Batch: 227890

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
Ammonia (as N)	1.89		5.01	8.320	LM	mg/L		128	90 - 110	1	15

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-164748/1-A

Matrix: Water

Analysis Batch: 166173

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 164748

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.2181	U	0.804	0.805	1.60	pCi/L	12/22/14 10:58	12/31/14 08:26	1
Gross Beta	0.6397	U	0.588	0.591	0.952	pCi/L	12/22/14 10:58	12/31/14 08:26	1

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity (Continued)

Lab Sample ID: LCS 160-164748/2-A
Matrix: Water
Analysis Batch: 166173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 164748

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits	
Gross Alpha	50.1	51.89		7.52	2.37	pCi/L	104	73 - 133	

Lab Sample ID: LCSB 160-164748/3-A
Matrix: Water
Analysis Batch: 166173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 164748

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits	
Gross Beta	95.9	97.40		10.3	0.936	pCi/L	102	75 - 125	

Lab Sample ID: 440-96594-R-1-F MS
Matrix: Water
Analysis Batch: 166172

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 164748

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits	
Gross Alpha	-0.942	U	50.1	41.79		6.16	1.47	pCi/L	83	35 - 150	

Lab Sample ID: 440-96594-R-1-G MSBT
Matrix: Water
Analysis Batch: 166172

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 164748

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits	
Gross Beta	3.86		95.9	103.3		10.9	1.01	pCi/L	104	89 - 143	

Lab Sample ID: 440-96594-R-1-H DU
Matrix: Water
Analysis Batch: 166172

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 164748

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	MDC	Unit	RER	RER Limit	
Gross Alpha	-0.942	U	0.4884	U	0.954	1.68	pCi/L	0.75		1
Gross Beta	3.86		2.472		0.803	1.01	pCi/L	0.81		1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-164475/1-A
Matrix: Water
Analysis Batch: 164603

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 164475

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Potassium-40	-17.38	U	169	169	224	pCi/L	12/19/14 11:40	12/21/14 22:44	1

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS) (Continued)

Lab Sample ID: LCS 160-164475/2-A
Matrix: Water
Analysis Batch: 164814

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 164475

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits	
Americium-241	137000	132000		15300	465	pCi/L	96	90 - 111	
Cesium-137	49400	48080		4820	149	pCi/L	97	90 - 111	
Cobalt-60	52800	50140		4960	116	pCi/L	95	89 - 110	

Lab Sample ID: 440-96594-R-1-D DU
Matrix: Water
Analysis Batch: 164822

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 164475

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	MDC	Unit	RER	RER Limit	
Cesium-137	-2.27	U	-0.3150	U	5.09	9.60	pCi/L	0.15	1	
Potassium-40	-81.3	U	-95.09	U	3800	173	pCi/L	0	1	

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-164103/1-A
Matrix: Water
Analysis Batch: 168026

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 164103

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	96.2		40 - 110	12/18/14 00:17	01/12/15 20:12	1

Lab Sample ID: LCS 160-164103/2-A
Matrix: Water
Analysis Batch: 168026

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 164103

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits	
Radium-226	11.2	8.867		0.920	0.104	pCi/L	79	68 - 137	

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	96.5		40 - 110

Lab Sample ID: 160-9831-E-8-B DU
Matrix: Water
Analysis Batch: 168078

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 164103

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	MDC	Unit	RER	RER Limit	
Radium-226	-0.0295	U	0.04535	U	0.0690	0.117	pCi/L	0.58	1	

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: 160-9831-E-8-B DU
 Matrix: Water
 Analysis Batch: 168078

Client Sample ID: Duplicate
 Prep Type: Total/NA
 Prep Batch: 164103

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	109		40 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-168188/1-A
 Matrix: Water
 Analysis Batch: 168922

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 168188

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2395	U	0.189	0.191	0.299	pCi/L	01/13/15 12:50	01/16/15 11:14	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110	01/13/15 12:50	01/16/15 11:14	1
Y Carrier	89.0		40 - 110	01/13/15 12:50	01/16/15 11:14	1

Lab Sample ID: LCS 160-168188/2-A
 Matrix: Water
 Analysis Batch: 168922

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 168188

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Radium-228	3.56	3.966		0.557	0.324	pCi/L	111	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	105		40 - 110
Y Carrier	85.6		40 - 110

Lab Sample ID: LCSD 160-168188/3-A
 Matrix: Water
 Analysis Batch: 168923

Client Sample ID: Lab Control Sample Dup
 Prep Type: Total/NA
 Prep Batch: 168188

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	3.56	2.968		0.459	0.317	pCi/L	83	56 - 140	0.98	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	104		40 - 110
Y Carrier	87.9		40 - 110

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-165620/1-A
 Matrix: Water
 Analysis Batch: 167123

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 165620

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.04484	U	0.176	0.176	0.321	pCi/L	12/29/14 18:01	01/07/15 15:55	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	90.0		40 - 110	12/29/14 18:01	01/07/15 15:55	1
Y Carrier	89.3		40 - 110	12/29/14 18:01	01/07/15 15:55	1

Lab Sample ID: LCS 160-165620/2-A
 Matrix: Water
 Analysis Batch: 167123

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 165620

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Strontium-90	8.95	8.768		0.905	0.298	pCi/L	98	90 - 134

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	88.6		40 - 110
Y Carrier	92.7		40 - 110

Lab Sample ID: 440-96594-A-2-G DU
 Matrix: Water
 Analysis Batch: 167123

Client Sample ID: Duplicate
 Prep Type: Total/NA
 Prep Batch: 165620

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	MDC	Unit	RER	RER Limit
Strontium-90	-0.255	U	-0.01446	U	0.155	0.281	pCi/L	0.79	1

Carrier	DU %Yield	DU Qualifier	Limits
Sr Carrier	88.2		40 - 110
Y Carrier	90.8		40 - 110

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-166399/1-A
 Matrix: Water
 Analysis Batch: 166478

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 166399

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	158.1	U	187	187	304	pCi/L	01/02/15 08:35	01/02/15 14:05	1

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: 906.0 - Tritium, Total (LSC) (Continued)

Lab Sample ID: LCS 160-166399/2-A
Matrix: Water
Analysis Batch: 166478

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 166399

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Tritium	3440	3383		509	306	pCi/L	98	74 - 114

Lab Sample ID: 280-63961-C-3-B MS
Matrix: Water
Analysis Batch: 166478

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 166399

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Tritium	1050		3450	4424		603	306	pCi/L	98	67 - 130

Lab Sample ID: 280-63670-A-3-D DU
Matrix: Water
Analysis Batch: 166478

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 166399

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	MDC	Unit	RER	RER Limit
Tritium	2030		1865		366	307	pCi/L	0.22	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-165361/1-A
Matrix: Water
Analysis Batch: 166357

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 165361

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.03958	U	0.06314	0.06318	0.0995	pCi/L	12/24/14 10:49	12/31/14 14:22	1

Lab Sample ID: LCS 160-165361/2-A
Matrix: Water
Analysis Batch: 166358

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 165361

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Uranium-234	12.7	13.13		1.57	0.0712	pCi/L	103	84 - 120
Uranium-238	13.0	14.40		1.68	0.108	pCi/L	111	83 - 121

Tracer	LCS %Yield	LCS Qualifier	Limits
Uranium-232	83.7		30 - 110

Lab Sample ID: 440-97211-A-2-D DU
Matrix: Water
Analysis Batch: 166370

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 165361

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	MDC	Unit	RER	RER Limit
Total Uranium	0.0479	U	0.2654	U	0.274	0.343	pCi/L	0.62	1

TestAmerica Irvine

QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

GC/MS VOA

Analysis Batch: 224555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96479-1	Outfall008_20141212_Grab	Total/NA	Water	624	
440-96479-2	TB-20141212	Total/NA	Water	624	
550-36708-D-2 MS	Matrix Spike	Total/NA	Water	624	
550-36708-D-2 MSD	Matrix Spike Duplicate	Total/NA	Water	624	
LCS 440-224555/4	Lab Control Sample	Total/NA	Water	624	
LCSD 440-224555/5	Lab Control Sample Dup	Total/NA	Water	624	
MB 440-224555/3	Method Blank	Total/NA	Water	624	

Analysis Batch: 224609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96455-D-3 MS	Matrix Spike	Total/NA	Water	624	
440-96455-D-3 MSD	Matrix Spike Duplicate	Total/NA	Water	624	
440-96479-1	Outfall008_20141212_Grab	Total/NA	Water	624	
440-96479-2	TB-20141212	Total/NA	Water	624	
LCS 440-224609/5	Lab Control Sample	Total/NA	Water	624	
MB 440-224609/6	Method Blank	Total/NA	Water	624	

GC/MS Semi VOA

Prep Batch: 224545

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	525.2	
LCS 440-224545/2-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 440-224545/3-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MB 440-224545/1-A	Method Blank	Total/NA	Water	525.2	

Prep Batch: 224726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	625	
LCS 440-224726/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 440-224726/3-A	Lab Control Sample Dup	Total/NA	Water	625	
MB 440-224726/1-A	Method Blank	Total/NA	Water	625	

Analysis Batch: 224763

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	525.2	224545
LCS 440-224545/2-A	Lab Control Sample	Total/NA	Water	525.2	224545
LCSD 440-224545/3-A	Lab Control Sample Dup	Total/NA	Water	525.2	224545
MB 440-224545/1-A	Method Blank	Total/NA	Water	525.2	224545

Analysis Batch: 226134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	625	224726
LCS 440-224726/2-A	Lab Control Sample	Total/NA	Water	625	224726
LCSD 440-224726/3-A	Lab Control Sample Dup	Total/NA	Water	625	224726
MB 440-224726/1-A	Method Blank	Total/NA	Water	625	224726

QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

GC Semi VOA

Prep Batch: 225106

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	608	
LCS 440-225106/2-A	Lab Control Sample	Total/NA	Water	608	
LCS 440-225106/4-A	Lab Control Sample	Total/NA	Water	608	
LCSD 440-225106/3-A	Lab Control Sample Dup	Total/NA	Water	608	
LCSD 440-225106/5-A	Lab Control Sample Dup	Total/NA	Water	608	
MB 440-225106/1-A	Method Blank	Total/NA	Water	608	

Analysis Batch: 225341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	608 PCB LL	225106
LCS 440-225106/4-A	Lab Control Sample	Total/NA	Water	608 PCB LL	225106
LCSD 440-225106/5-A	Lab Control Sample Dup	Total/NA	Water	608 PCB LL	225106
MB 440-225106/1-A	Method Blank	Total/NA	Water	608 PCB LL	225106

Analysis Batch: 225351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	608 Pesticides	225106
LCS 440-225106/2-A	Lab Control Sample	Total/NA	Water	608 Pesticides	225106
LCSD 440-225106/3-A	Lab Control Sample Dup	Total/NA	Water	608 Pesticides	225106
MB 440-225106/1-A	Method Blank	Total/NA	Water	608 Pesticides	225106

HPLC/IC

Analysis Batch: 224245

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96479-1	Outfall008_20141212_Grab	Total/NA	Water	218.6	
440-96479-1 MS	Outfall008_20141212_Grab	Total/NA	Water	218.6	
440-96479-1 MSD	Outfall008_20141212_Grab	Total/NA	Water	218.6	
LCS 440-224245/2	Lab Control Sample	Total/NA	Water	218.6	
MB 440-224245/3	Method Blank	Total/NA	Water	218.6	
MRL 440-224245/4	Lab Control Sample	Total/NA	Water	218.6	

Analysis Batch: 224500

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96539-L-1 MS	Matrix Spike	Total/NA	Water	300.0	
440-96539-L-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	300.0	
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	300.0	
LCS 440-224500/6	Lab Control Sample	Total/NA	Water	300.0	
MB 440-224500/4	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 224501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96539-L-1 MS	Matrix Spike	Total/NA	Water	300.0	
440-96539-L-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	300.0	
LCS 440-224501/6	Lab Control Sample	Total/NA	Water	300.0	
MB 440-224501/4	Method Blank	Total/NA	Water	300.0	

QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

HPLC/IC (Continued)

Analysis Batch: 227034

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	314.0	
440-97367-A-2 MS	Matrix Spike	Total/NA	Water	314.0	
440-97367-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	
LCS 440-227034/7	Lab Control Sample	Total/NA	Water	314.0	
MB 440-227034/8	Method Blank	Total/NA	Water	314.0	
MRL 440-227034/5	Lab Control Sample	Total/NA	Water	314.0	

Analysis Batch: 227109

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	NO3NO2 Calc	

Specialty Organics

Analysis Batch: 4351027

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Total	Water	1613B	
H4L170000027B	Method Blank	Total	Water	1613B	
H4L170000027C	Lab Control Sample	Total	Water	1613B	

Prep Batch: 4351027_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Total	Water	1613	
H4L170000027B	Method Blank	Total	Water	1613	
H4L170000027C	Lab Control Sample	Total	Water	1613	

Metals

Prep Batch: 225232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	245.1	
440-96890-D-1-B MS	Matrix Spike	Total/NA	Water	245.1	
440-96890-D-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	
LCS 440-225232/2-A	Lab Control Sample	Total/NA	Water	245.1	
MB 440-225232/1-A	Method Blank	Total/NA	Water	245.1	

Analysis Batch: 225520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	245.1	225232
440-96890-D-1-B MS	Matrix Spike	Total/NA	Water	245.1	225232
440-96890-D-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	225232
LCS 440-225232/2-A	Lab Control Sample	Total/NA	Water	245.1	225232
MB 440-225232/1-A	Method Blank	Total/NA	Water	245.1	225232

Prep Batch: 226388

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96605-A-1-C MS	Matrix Spike	Total Recoverable	Water	200.2	
440-96605-A-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	
440-96606-1	Outfall008_20141212_Comp	Total Recoverable	Water	200.2	
LCS 440-226388/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
LCSD 440-226388/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.2	

TestAmerica Irvine

QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Metals (Continued)

Prep Batch: 226388 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-226388/1-A	Method Blank	Total Recoverable	Water	200.2	

Filtration Batch: 226565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-Q-1-I MS	Matrix Spike	Dissolved	Water	FILTRATION	
440-96594-Q-1-J MSD	Matrix Spike Duplicate	Dissolved	Water	FILTRATION	
440-96606-1	Outfall008_20141212_Comp	Dissolved	Water	FILTRATION	
440-96606-1 MS	Outfall008_20141212_Comp	Dissolved	Water	FILTRATION	
440-96606-1 MSD	Outfall008_20141212_Comp	Dissolved	Water	FILTRATION	
LCS 440-226565/2-B	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 440-226565/2-C	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 440-226565/2-D	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 440-226565/3-B	Lab Control Sample Dup	Dissolved	Water	FILTRATION	
MB 440-226565/1-B	Method Blank	Dissolved	Water	FILTRATION	
MB 440-226565/1-C	Method Blank	Dissolved	Water	FILTRATION	
MB 440-226565/1-D	Method Blank	Dissolved	Water	FILTRATION	

Analysis Batch: 226568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96605-A-1-C MS	Matrix Spike	Total Recoverable	Water	200.8	226388
440-96605-A-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	226388
440-96606-1	Outfall008_20141212_Comp	Total Recoverable	Water	200.8	226388
LCS 440-226388/2-A	Lab Control Sample	Total Recoverable	Water	200.8	226388
LCS 440-226388/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	226388
MB 440-226388/1-A	Method Blank	Total Recoverable	Water	200.8	226388

Prep Batch: 226624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Dissolved	Water	245.1	226565
440-96606-1 MS	Outfall008_20141212_Comp	Dissolved	Water	245.1	226565
440-96606-1 MSD	Outfall008_20141212_Comp	Dissolved	Water	245.1	226565
LCS 440-226565/2-B	Lab Control Sample	Dissolved	Water	245.1	226565
MB 440-226565/1-B	Method Blank	Dissolved	Water	245.1	226565

Prep Batch: 226697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-Q-1-I MS	Matrix Spike	Dissolved	Water	200.2	226565
440-96594-Q-1-J MSD	Matrix Spike Duplicate	Dissolved	Water	200.2	226565
440-96606-1	Outfall008_20141212_Comp	Dissolved	Water	200.2	226565
LCS 440-226565/2-C	Lab Control Sample	Dissolved	Water	200.2	226565
MB 440-226565/1-C	Method Blank	Dissolved	Water	200.2	226565

Prep Batch: 226703

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Dissolved	Water	200.2	226565
440-96606-1 MS	Outfall008_20141212_Comp	Dissolved	Water	200.2	226565
440-96606-1 MSD	Outfall008_20141212_Comp	Dissolved	Water	200.2	226565
LCS 440-226565/2-D	Lab Control Sample	Dissolved	Water	200.2	226565
LCS 440-226565/3-B	Lab Control Sample Dup	Dissolved	Water	200.2	226565
MB 440-226565/1-D	Method Blank	Dissolved	Water	200.2	226565

QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Metals (Continued)

Prep Batch: 226721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Total Recoverable	Water	200.2	
440-96646-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.2	
440-96646-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	
LCS 440-226721/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-226721/1-A	Method Blank	Total Recoverable	Water	200.2	

Analysis Batch: 226974

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Total Recoverable	Water	200.7 Rev 4.4	226721
440-96646-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	226721
440-96646-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	226721
LCS 440-226721/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	226721
MB 440-226721/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	226721

Analysis Batch: 226988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Dissolved	Water	200.8	226703
440-96606-1 MS	Outfall008_20141212_Comp	Dissolved	Water	200.8	226703
440-96606-1 MSD	Outfall008_20141212_Comp	Dissolved	Water	200.8	226703
LCS 440-226565/2-D	Lab Control Sample	Dissolved	Water	200.8	226703
LCSD 440-226565/3-B	Lab Control Sample Dup	Dissolved	Water	200.8	226703
MB 440-226565/1-D	Method Blank	Dissolved	Water	200.8	226703

Analysis Batch: 227057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Dissolved	Water	245.1	226624
440-96606-1 MS	Outfall008_20141212_Comp	Dissolved	Water	245.1	226624
440-96606-1 MSD	Outfall008_20141212_Comp	Dissolved	Water	245.1	226624
LCS 440-226565/2-B	Lab Control Sample	Dissolved	Water	245.1	226624
MB 440-226565/1-B	Method Blank	Dissolved	Water	245.1	226624

Analysis Batch: 227114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Total Recoverable	Water	200.7 Rev 4.4	226721
440-96646-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	226721
440-96646-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	226721
LCS 440-226721/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	226721
MB 440-226721/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	226721

Analysis Batch: 227313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-Q-1-I MS	Matrix Spike	Dissolved	Water	200.7 Rev 4.4	226697
440-96594-Q-1-J MSD	Matrix Spike Duplicate	Dissolved	Water	200.7 Rev 4.4	226697
440-96606-1	Outfall008_20141212_Comp	Dissolved	Water	200.7 Rev 4.4	226697
LCS 440-226565/2-C	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	226697
MB 440-226565/1-C	Method Blank	Dissolved	Water	200.7 Rev 4.4	226697

QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

General Chemistry

Prep Batch: 224778

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96113-A-5-B MS	Matrix Spike	Total/NA	Water	Distill/CN	
440-96113-A-5-C MSD	Matrix Spike Duplicate	Total/NA	Water	Distill/CN	
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	Distill/CN	
LCS 440-224778/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
LCS 440-224778/3-A	Lab Control Sample Dup	Total/NA	Water	Distill/CN	
MB 440-224778/1-A	Method Blank	Total/NA	Water	Distill/CN	

Analysis Batch: 224827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96113-A-5-B MS	Matrix Spike	Total/NA	Water	SM 4500 CN E	224778
440-96113-A-5-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 CN E	224778
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	SM 4500 CN E	224778
LCS 440-224778/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	224778
LCS 440-224778/3-A	Lab Control Sample Dup	Total/NA	Water	SM 4500 CN E	224778
MB 440-224778/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	224778

Analysis Batch: 225438

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	SM 2540C	
440-96606-1 DU	Outfall008_20141212_Comp	Total/NA	Water	SM 2540C	
LCS 440-225438/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 440-225438/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 225696

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96493-C-1 DU	Duplicate	Total/NA	Water	SM 2540D	
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	SM 2540D	
LCS 440-225696/1	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 440-225696/2	Method Blank	Total/NA	Water	SM 2540D	

Prep Batch: 226034

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96479-1	Outfall008_20141212_Grab	Total/NA	Water	1664A	
LCS 440-226034/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCS 440-226034/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	
MB 440-226034/1-A	Method Blank	Total/NA	Water	1664A	

Analysis Batch: 226039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96479-1	Outfall008_20141212_Grab	Total/NA	Water	1664A	226034
LCS 440-226034/2-A	Lab Control Sample	Total/NA	Water	1664A	226034
LCS 440-226034/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	226034
MB 440-226034/1-A	Method Blank	Total/NA	Water	1664A	226034

Analysis Batch: 226150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	SM 4500 F C	
440-96708-F-1 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
440-96708-F-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
LCS 440-226150/9	Lab Control Sample	Total/NA	Water	SM 4500 F C	
MB 440-226150/10	Method Blank	Total/NA	Water	SM 4500 F C	

TestAmerica Irvine

QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

General Chemistry (Continued)

Analysis Batch: 227890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	SM 4500 NH3 G	
440-98014-W-23 MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 G	
440-98014-W-23 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 G	
LCS 440-227890/10	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	
MB 440-227890/9	Method Blank	Total/NA	Water	SM 4500 NH3 G	

Rad

Prep Batch: 164103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9831-E-8-B DU	Duplicate	Total/NA	Water	PrecSep-21	
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	PrecSep-21	
440-96606-2	Trip_Blank_20141212	Total/NA	Water	PrecSep-21	
LCS 160-164103/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
MB 160-164103/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 164475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-R-1-D DU	Duplicate	Total/NA	Water	Fill_Geo-0	
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	Fill_Geo-0	
440-96606-2	Trip_Blank_20141212	Total/NA	Water	Fill_Geo-0	
LCS 160-164475/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
MB 160-164475/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	

Prep Batch: 164748

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-R-1-F MS	Matrix Spike	Total/NA	Water	Evaporation	
440-96594-R-1-G MSBT	Matrix Spike	Total/NA	Water	Evaporation	
440-96594-R-1-H DU	Duplicate	Total/NA	Water	Evaporation	
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	Evaporation	
440-96606-2	Trip_Blank_20141212	Total/NA	Water	Evaporation	
LCS 160-164748/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-164748/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
MB 160-164748/1-A	Method Blank	Total/NA	Water	Evaporation	

Prep Batch: 165361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	ExtChrom	
440-96606-2	Trip_Blank_20141212	Total/NA	Water	ExtChrom	
440-97211-A-2-D DU	Duplicate	Total/NA	Water	ExtChrom	
LCS 160-165361/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
MB 160-165361/1-A	Method Blank	Total/NA	Water	ExtChrom	

Prep Batch: 165620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96594-A-2-G DU	Duplicate	Total/NA	Water	PrecSep-7	
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	PrecSep-7	
440-96606-2	Trip_Blank_20141212	Total/NA	Water	PrecSep-7	
LCS 160-165620/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
MB 160-165620/1-A	Method Blank	Total/NA	Water	PrecSep-7	

TestAmerica Irvine

QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Rad (Continued)

Prep Batch: 166399

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-63670-A-3-D DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	
280-63961-C-3-B MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	LSC_Dist_Susp	
LCS 160-166399/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
MB 160-166399/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 168188

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96606-1	Outfall008_20141212_Comp	Total/NA	Water	PrecSep_0	
440-96606-2	Trip_Blank_20141212	Total/NA	Water	PrecSep_0	
LCS 160-168188/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCS 160-168188/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	
MB 160-168188/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Biology

Analysis Batch: 225038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96457-1	Outfall008_20141212_Grab	Total/NA	Water	SM 9221E	

Analysis Batch: 225040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96457-1	Outfall008_20141212_Grab	Total/NA	Water	SM 9221F	

Subcontract

Analysis Batch: 163946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
BLANK	BLANK	Total/NA	WATER	TEM	163946_P

Prep Batch: 163946_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
BLANK	BLANK	Total/NA	WATER	NA	

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)

GC/MS Semi VOA

Qualifier	Qualifier Description
LH	Surrogate Recoveries were higher than QC limits
LQ	LCS/LCSD recovery above method control limits
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

HPLC/IC

Qualifier	Qualifier Description
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

DIOXIN

Qualifier	Qualifier Description
Q	Estimated maximum possible concentration (EMPC).
J	Estimated result. Result is less than the reporting limit.
B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Metals

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
QP	Holding time Immediate. Analyzed as close to receipt as possible
IB	CCV recovery above limit; analyte not detected
LQ	LCS/LCSD recovery above method control limits

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)

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.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
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)

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Certification Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-15
Arizona	State Program	9	AZ0671	10-13-15
California	LA Cty Sanitation Districts	9	10256	01-31-16 *
California	State Program	9	2706	06-30-16
Guam	State Program	9	Cert. No. 12.002r	01-23-15 *
Hawaii	State Program	9	N/A	01-29-16
Nevada	State Program	9	CA015312007A	07-31-15
New Mexico	State Program	6	N/A	01-29-15 *
Northern Mariana Islands	State Program	9	MP0002	01-29-15 *
Oregon	NELAP	10	4005	01-29-16
USDA	Federal		P330-09-00080	06-06-15
USEPA UCMR	Federal	1	CA01531	01-31-15

Laboratory: TestAmerica Knoxville

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0688	06-17-15
California	State Program	9	2423	06-30-16
Colorado	State Program	8	N/A	02-28-15
Connecticut	State Program	1	PH-0223	09-30-15
Florida	NELAP	4	E87177	06-30-15
Georgia	State Program	4	906	04-13-17
Hawaii	State Program	9	N/A	04-13-15
Kentucky (DW)	State Program	4	90101	12-31-15
L-A-B	DoD ELAP		L2311	02-13-16
Louisiana	NELAP	6	83979	06-30-15
Louisiana	NELAP	6	LA110001	12-31-15
Maryland	State Program	3	277	03-31-15
Michigan	State Program	5	9933	04-13-17
Nevada	State Program	9	TN00009	07-31-15
New Jersey	NELAP	2	TN001	06-30-15
New York	NELAP	2	10781	03-31-15
North Carolina (DW)	State Program	4	21705	07-31-15
North Carolina (WW/SW)	State Program	4	64	12-31-15
Ohio VAP	State Program	5	CL0059	03-26-15
Oklahoma	State Program	6	9415	08-31-15
Pennsylvania	NELAP	3	68-00576	12-31-15
South Carolina	State Program	4	84001	06-30-15
Tennessee	State Program	4	2014	04-13-17
Texas	NELAP	6	T104704380-TX	08-31-15
USDA	Federal		P330-13-00260	08-29-16
Utah	NELAP	8	QUAN3	07-31-15
Virginia	NELAP	3	460176	09-14-15
Virginia	State Program	3	165	06-30-15
Washington	State Program	10	C593	01-19-16
West Virginia (DW)	State Program	3	9955C	12-31-14
West Virginia DEP	State Program	3	345	04-30-15
Wisconsin	State Program	5	998044300	08-31-15

Laboratory: TestAmerica St. Louis

* Certification renewal pending - certification considered valid.

TestAmerica Irvine

Certification Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-15
California	NELAP	9	2886	03-31-15
Connecticut	State Program	1	PH-0241	03-31-15
Florida	NELAP	4	E87689	06-30-15
Illinois	NELAP	5	200023	11-30-15
Iowa	State Program	7	373	12-01-14 *
Kansas	NELAP	7	E-10236	03-31-15 *
Kentucky (DW)	State Program	4	90125	12-31-14 *
L-A-B	DoD ELAP		L2305	01-10-16
Louisiana	NELAP	6	LA150017	12-31-16
Maryland	State Program	3	310	09-30-15
Missouri	State Program	7	780	06-30-15
Nevada	State Program	9	MO000542013-1	07-31-15
New Jersey	NELAP	2	MO002	06-30-15
New Mexico	State Program	6		06-30-10 *
New York	NELAP	2	11616	03-31-15 *
North Dakota	State Program	8	R207	06-30-15
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-15
Pennsylvania	NELAP	3	68-00540	02-28-15 *
South Carolina	State Program	4	85002001	06-30-15
Texas	NELAP	6	T104704193-13-6	07-31-15
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542013-5	07-31-15
Virginia	NELAP	3	460230	06-14-15
Washington	State Program	10	C592	08-30-15
West Virginia DEP	State Program	3	381	08-31-15

* Certification renewal pending - certification considered valid.

113940

Chain of Custody Record



Client Information (Sub Contract Lab)
 Client Contact: Shipping/Receiving
 Company: EMS Laboratories
 Address: 117 West Bellevue Drive, Site 3
 City: Pasadena
 State, Zip: CA, 91105-2503
 Phone: CA, 91105-2503
 Email: [Redacted]
 Project Name: Boeing SSFL outfalls
 Site: [Redacted]

Sampler: Wilson, Debby S
 Lab P/N: [Redacted]
 Carrier Tracking No(s): [Redacted]
 Due Date Requested: 12/29/2014
 TAT Requested (days): [Redacted]
 Analysis Requested: [Redacted]

COC No: 440-70042-1
 Page: Page 1 of 1
 Job #: 440-96606-1
 Preservation Codes:
 A - HCL, M - Hexane
 B - NaOH, N - None
 C - Zn Acetate, O - AsNaO2
 D - Nitric Acid, P - Na2CO3
 E - NaHSO4, Q - Na2SO3
 F - MeOH, R - Na2S2O3
 G - Amchlor, S - H2SO4
 H - Ascrobic Acid, T - TSP Dodecalhydrate
 I - Ice, U - Acetone
 J - DI Water, V - MCAA
 K - EDTA, W - pin 4.5
 L - EDTA, Z - other (specify)
 Other: [Redacted]

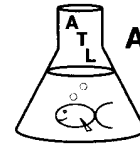
Sample ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix (Water, Snow, Ice, etc.)	Field Filtered Sample (Y/N)	Analysis Requested	Total Number of Containers	Special Instructions/Note
Outfall_008_20141212 (440-96606-1)	12/12/14	15:17 Pacific		Water	X	SUB (Asbestos) Asbestos 100.2 Run Derby		

Possible Hazard Identification
 Unconfirmed
 Deliverable Requested: I, II, III, IV, Other (specify)
 Empty Kit Relinquished by: [Redacted] Date: [Redacted]
 Relinquished by: [Redacted] Date/Time: 12/15/14 Company: DCS
 Relinquished by: [Redacted] Date/Time: 12/15/14 Company: DCS
 Relinquished by: [Redacted] Date/Time: 12/15/14 Company: DCS
 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: [Redacted]
 Method of Shipment: [Redacted]

Received by: [Redacted] Date/Time: 12/15
 Received by: [Redacted] Date/Time: 12/15/14
 Received by: [Redacted] Date/Time: 12/15/14
 Cooler Temperature(s) °C and Other Remarks: [Redacted]

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LABORATORY REPORT



**Aquatic
Testing
Laboratories**

"dedicated to providing quality aquatic toxicity testing"

4350 Transport Street, Unit 107
Ventura, CA 93003
(805) 650-0546 FAX (805) 650-0756
CA ELAP Cert. No.: 1775

Date: December 17, 2014
Client: Test America – Irvine
17461 Derian Ave., Suite 100
Irvine, CA 92614
Attn: Debby Wilson

Laboratory No.: A-14121304-001
Job No.: 440-96457-1
Sample ID.: 440-96479-1

Sample Control: The sample was received by ATL in a chilled state, within the recommended hold time and with the chain of custody record attached.

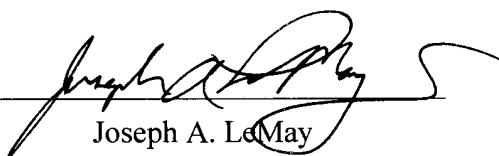
Date Sampled: 12/12/14
Date Received: 12/13/14
Temp. Received: 0.7°C
Chlorine (TRC): 0.0 mg/l
Date Tested: 12/13/14 to 12/17/14

Sample Analysis: The following analyses were performed on your sample:
Fathead Minnow 96hr Percent Survival Bioassay (EPA Method 2000.0).
Attached are the test data generated from the analysis of your sample. All testing was conducted under the direct supervision of Joseph A. LeMay. Daily test readings were taken by Joseph A. LeMay (initialed: JAL) and Jacob LeMay (initialed: J).

Result Summary:

<u>Sample ID.</u>	<u>Results</u>
440-96479-1	100% Survival (TU _a = 0.0)

Quality Control: Reviewed and approved by:


Joseph A. LeMay
Laboratory Director

FATHEAD MINNOW PERCENT SURVIVAL TEST
EPA Method 2000.0



Lab No.: A-14121304-001

Client/ID: TestAmerica - Boeing Outfall 008
 440 - 96479-1

Start Date: 12/13/2014

TEST SUMMARY

Species: *Pimephales promelas*.
 Age: 1 (1-14) days.
 Regulations: NPDES.
 Test solution volume: 250 ml.
 Feeding: prior to renewal at 48 hrs.
 Number of replicates: 4.
 Control water: Moderately hard reconstituted water.
 Photoperiod: 16/8 hrs light/dark.

Source: In-laboratory Culture.
 Test type: Static-Renewal.
 Test Protocol: EPA-821-R-02-012.
 Endpoints: Percent Survival at 96 hrs.
 Test chamber: 600 ml beakers.
 Temperature: 20 +/- 1°C.
 Number of fish per chamber: 10.
 QA/QC No.: RT-141203.

TEST DATA

		°C	DO	pH	# Dead				Analyst & Time of Readings
					A	B	C	D	
INITIAL	Control	19.9	8.6	7.9	0	0	0	0	2 12-13-14 1230
	100%	19.8	8.9	7.9	0	0	0	0	
24 Hr	Control	20.0	8.5	7.9	0	0	0	0	2 12-14-14 1230
	100%	19.9	8.5	8.0	0	0	0	0	
48 Hr	Control	19.6	8.3	8.0	0	0	0	0	2 12-15-14 1200
	100%	19.4	8.0	7.9	0	0	0	0	
Renewal	Control	19.7	8.9	8.1	0	0	0	0	2 12-15-14 1200
	100%	19.4	9.0	7.9	0	0	0	0	
72 Hr	Control	20.1	8.1	7.7	0	0	0	0	2 12-16-14 1200
	100%	19.9	7.8	7.7	0	0	0	0	
96 Hr	Control	19.9	7.8	7.8	0	0	0	0	2 12-17-14 1200
	100%	19.7	7.8	7.7	0	0	0	0	

Comments:

Sample as received: Chlorine: 0.0 mg/l; pH: 7.6; Conductivity: 165 umho; Temp: 0.7°C;
 DO: 10.0 mg/l; Alkalinity: 29 mg/l; Hardness: 80 mg/l; NH₃-N: 0.2 mg/l.
 Sample aerated moderately (approx. 500 ml/min) to raise or lower DO? Yes / No.
 Control: Alkalinity: 55 mg/l; Hardness: 93 mg/l; Conductivity: 329 umho.
 Test solution aerated (not to exceed 100 bubbles/min) to maintain DO > 4.0 mg/l? Yes / No.
 Sample used for renewal is the original sample kept at 0-6°C with minimal headspace.
 Dissolved Oxygen (DO) readings in mg/l O₂.

RESULTS

Percent Survival In: Control: 100 % 100% Sample: 100 %

TestAmerica Irvine
 17461 Deegan Ave Suite 100
 Irvine, CA 92614-8817
 Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab) Sampler: Wilson, Debby S Lab PM: Wilson, Debby S Phone: debby.wilson@testamericainc.com E-Mail: debby.wilson@testamericainc.com Client Tracking No(s): 440-70274.1 Page 1 of 1 Job #: 440-96457-1		Analysis Requested Preservation Codes: M - Hexane N - None O - As ₂ NeO ₂ P - Na ₂ SO ₄ Q - Na ₂ SO ₃ R - Na ₂ SO ₃ S - H ₂ SO ₄ T - TSP Dodecahydrate U - Acetone V - VCAA W - ph 4-5 X - EDTA Y - EDA Z - other (specify) Other:	
Client Information (Sub Contract Lab) Address: Aquatic Testing Laboratories 4350 Transport #107, City: Ventura State: CA, 93003 Phone: Email: Project Name: Boeing SSFL NPDES Annual and Routine 008 Project #: 44009879 SOW#:		Due Date Requested: 12/29/2014 TAT Requested (days): PO #: WO #: Project #: 44009879 SOW#:	
Sample Identification - Client ID (Lab ID) Outfall008_20141212_Grab (440-96479-1)		Matrix (Inorganic, Organic, Other): Sample Type (C=comp, G=grab): Sample Time: 08:55 Pacific Sample Date: 12/12/14 Matrix: Water	
Possible Hazard Identification Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/Note: Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Empty Kit Relinquished by: Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by:		Date: 12-12-14 Date/Time: 12-13-14 1030 Date/Time:	
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 0-7	





REFERENCE TOXICANT DATA

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

FATHEAD MINNOW ACUTE Reference Toxicant - SDS



QA/QC Batch No.: RT-141203

TEST SUMMARY

Species: *Pimephales promelas*.

Age: 12 days old.

Regulations: NPDES.

Test chamber volume: 250 ml.

Feeding: Prior to renewal at 48 hrs.

Temperature: 20 +/- 1°C.

Number of replicates: 2.

Dilution water: MHSF.

Source: In-lab culture.

Test type: Static-Renewal.

Test Protocol: EPA-821-R-02-012.

Endpoints: LC50 at 96 hrs.

Test chamber: 600 ml beakers.

Aeration: None.

Number of organisms per chamber: 10.

Photoperiod: 16/8 hrs light/dark.

TEST DATA

Date/Time:	INITIAL			24 Hr				48 Hr					
	<u>12-3-14 1115</u>			<u>12-4-14 1100</u>				<u>12-5-14 1130</u>					
	<u>J</u>			<u>J</u>				<u>J</u>					
	°C	DO	pH	°C	DO	pH	# Dead		°C	DO	pH	# Dead	
A							B	A				B	
Control	<u>20.6</u>	<u>7.9</u>	<u>7.7</u>	<u>20.7</u>	<u>7.2</u>	<u>7.6</u>	<u>0</u>	<u>0</u>	<u>20.6</u>	<u>7.7</u>	<u>7.8</u>	<u>0</u>	<u>0</u>
1.0 mg/l	<u>20.5</u>	<u>8.1</u>	<u>7.7</u>	<u>20.6</u>	<u>7.5</u>	<u>7.7</u>	<u>0</u>	<u>0</u>	<u>20.7</u>	<u>7.6</u>	<u>7.9</u>	<u>0</u>	<u>0</u>
2.0 mg/l	<u>20.5</u>	<u>8.2</u>	<u>7.8</u>	<u>20.5</u>	<u>8.0</u>	<u>7.7</u>	<u>0</u>	<u>0</u>	<u>20.6</u>	<u>7.7</u>	<u>7.8</u>	<u>0</u>	<u>0</u>
4.0 mg/l	<u>20.6</u>	<u>8.3</u>	<u>7.8</u>	<u>20.6</u>	<u>8.1</u>	<u>7.7</u>	<u>5</u>	<u>1</u>	<u>20.7</u>	<u>7.6</u>	<u>7.9</u>	<u>1</u>	<u>3</u>
8.0 mg/l	<u>20.6</u>	<u>8.1</u>	<u>7.8</u>	<u>20.6</u>	<u>7.8</u>	<u>7.7</u>	<u>10</u>	<u>10</u>	-	-	-	-	-
16.0 mg/l	<u>20.5</u>	<u>8.2</u>	<u>7.8</u>	<u>20.6</u>	<u>7.5</u>	<u>7.7</u>	<u>10</u>	<u>10</u>	-	-	-	-	-

Date/Time:	RENEWAL			72 Hr				96 Hr					
	<u>12-5-14 1130</u>			<u>12-6-14 1200</u>				<u>12-7-14 1100</u>					
	<u>J</u>			<u>J</u>				<u>J</u>					
	°C	DO	pH	°C	DO	pH	# Dead		°C	DO	pH	# Dead	
A							B	A				B	
Control	<u>20.6</u>	<u>8.0</u>	<u>7.8</u>	<u>20.5</u>	<u>8.0</u>	<u>8.0</u>	<u>0</u>	<u>0</u>	<u>20.2</u>	<u>8.0</u>	<u>7.8</u>	<u>0</u>	<u>0</u>
1.0 mg/l	<u>20.7</u>	<u>8.2</u>	<u>7.9</u>	<u>20.6</u>	<u>7.5</u>	<u>8.0</u>	<u>0</u>	<u>0</u>	<u>20.2</u>	<u>8.2</u>	<u>7.9</u>	<u>0</u>	<u>0</u>
2.0 mg/l	<u>20.6</u>	<u>8.3</u>	<u>7.9</u>	<u>20.6</u>	<u>7.7</u>	<u>8.0</u>	<u>0</u>	<u>0</u>	<u>20.2</u>	<u>8.2</u>	<u>7.8</u>	<u>0</u>	<u>0</u>
4.0 mg/l	<u>20.7</u>	<u>8.3</u>	<u>7.9</u>	<u>20.6</u>	<u>7.8</u>	<u>8.0</u>	<u>0</u>	<u>0</u>	<u>20.1</u>	<u>8.1</u>	<u>7.8</u>	<u>0</u>	<u>0</u>
8.0 mg/l	-	-	-	-	-	-	-	-	-	-	-	-	-
16.0 mg/l	-	-	-	-	-	-	-	-	-	-	-	-	-

Comments: Control: Alkalinity: 54 mg/l; Hardness: 93 mg/l; Conductivity: 298 umho.
 SDS: Alkalinity: 55 mg/l; Hardness: 93 mg/l; Conductivity: 305 umho.

Concentration-response relationship acceptable? (see attached computer analysis):

Yes (response curve normal)

No (dose interrupted indicated or non-normal)

Acute Fish Test-96 Hr Survival

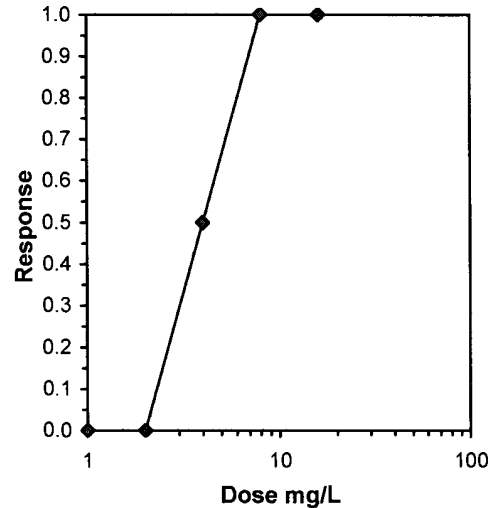
Start Date: 12/3/2014 11:15 Test ID: RT141203 Sample ID: REF-Ref Toxicant
 End Date: 12/7/2014 11:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SDS-Sodium dodecyl sulfate
 Sample Date: 12/3/2014 Protocol: EPAAW02-EPA/821/R-02-01 Test Species: PP-Pimephales promelas
 Comments:

Conc-mg/L	1	2
D-Control	1.0000	1.0000
1	1.0000	1.0000
2	1.0000	1.0000
4	0.4000	0.6000
8	0.0000	0.0000
16	0.0000	0.0000

Conc-mg/L	Mean	N-Mean	Transform: Arcsin Square Root					N	Number Resp	Total Number
			Mean	Min	Max	CV%				
D-Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0	20	
1	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0	20	
2	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0	20	
4	0.5000	0.5000	0.7854	0.6847	0.8861	18.129	2	10	20	
8	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2	20	20	
16	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2	20	20	

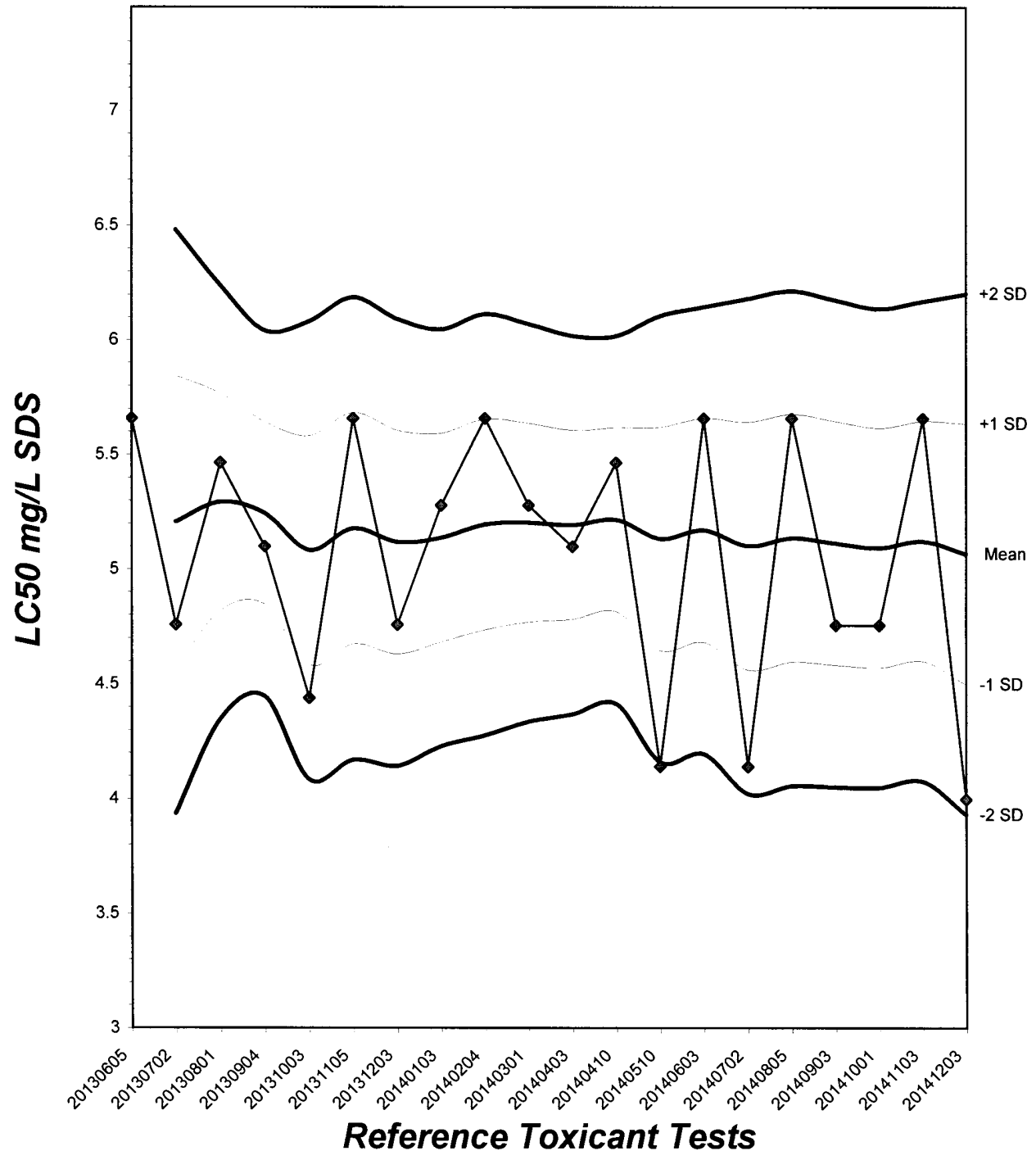
Auxiliary Tests Statistic Critical Skew Kurt
 Normality of the data set cannot be confirmed
 Equality of variance cannot be confirmed

Trimmed Spearman-Kärber			
Trim Level	EC50	95% CL	
0.0%	4.0000	3.4257	4.6706
5.0%	4.0000	3.3672	4.7517
10.0%	4.0000	3.2955	4.8551
20.0%	4.0000	3.0894	5.1790
Auto-0.0%	4.0000	3.4257	4.6706



Fathead Minnow Acute Laboratory Control Chart

CV% = 11.2



TEST ORGANISM LOG
FATHEAD MINNOW - LARVAL
(*Pimephales promelas*)



QA/QC BATCH NO.: RT-141203

SOURCE: In-Lab Culture

DATE HATCHED: 11-21-14

APPROXIMATE QUANTITY: 400

GENERAL APPEARANCE: good

MORTALITIES 48 HOURS PRIOR TO
TO USE IN TESTING: 0

DATE USED IN LAB: 12/3/14

AVERAGE FISH WEIGHT: 0.006 gm

LOADING LIMITS: 0.65 gm/liter @ 20°C, 0.40 gm/liter @ 25°C

Approximately 1000 fish per 10 liters limit if held overnight for acclimation without filtration @ 20°C for fish with a mean weight of 0.006 gm.

Approximately 650 fish per 10 liters limit if held overnight for acclimation without filtration @ 25°C for fish with a mean weight of 0.006 gm.

200 ml test solution volume = 0.013 gm mean fish weight limit @ 20°C; 0.008 @ 25°C

250 ml test solution volume = 0.016 gm mean fish weight limit @ 20°C; 0.010 @ 25°C

ACCLIMATION WATER QUALITY:

Temp.: 20.6 °C

pH: 7.7 Ammonia: 0 mg/l NH₃-N

DO: 7.9 mg/l

Alkalinity: 54 mg/l

Hardness: 93 mg/l

READINGS RECORDED BY: [Signature]

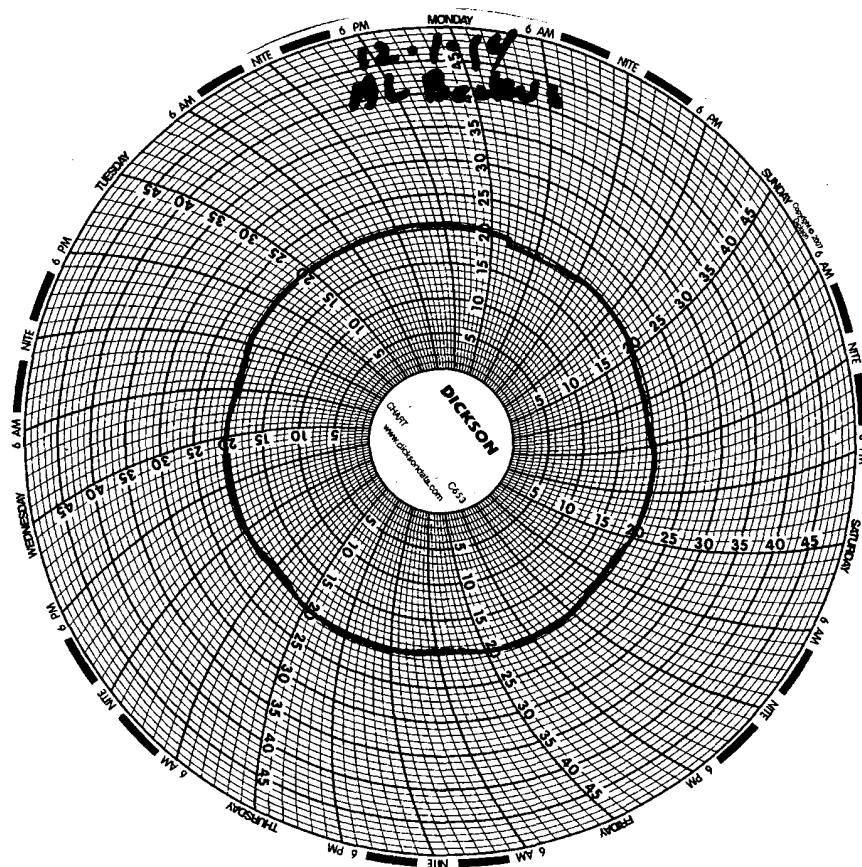
DATE: 12-4-14

Test Temperature Chart

Test No: RT-141202

Date Tested: 12/03/14 to 12/07/14

Acceptable Range: 20 +/- 1°C



LABORATORY REPORT



**Aquatic
Testing
Laboratories**

"dedicated to providing quality aquatic toxicity testing"

4350 Transport Street, Unit 107
Ventura, CA 93003
(805) 650-0546 FAX (805) 650-0756
CA ELAP Cert. No.: 1775

Date: December 22, 2014

Client: TestAmerica, Irvine
17461 Derian Ave., Suite 100
Irvine, CA 92614
Attn: Debby Wilson

Laboratory No.: A-14121306-001
Job No.: 440-96457-1
Sample I.D.: Outfall_008_20141212 (440-96606-1)

Sample Control: The sample was received by ATL chilled, within the recommended hold time and with the chain of custody record attached. Testing conducted on only one sample per client instruction.

Date Sampled: 12/12/14
Date Received: 12/13/14
Temp. Received: 2.2°C
Chlorine (TRC): 0.0 mg/l
Date Tested: 12/13/14 to 12/20/14

Sample Analysis: The following analyses were performed on your sample:

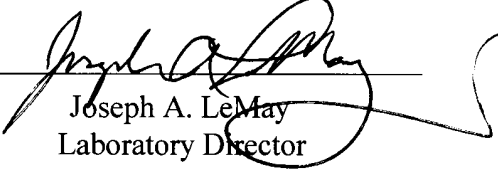
Ceriodaphnia dubia Survival and Reproduction Test (EPA Method 1002).

Attached are the test data generated from the analysis of your sample. All testing was conducted under the direct supervision of Joseph A. LeMay. Daily test readings were taken by Joseph A. LeMay (initialed: JAL) and Jacob LeMay (initialed: J).

Result Summary:

Chronic:	<u>NOEC</u>	<u>TUc</u>
<i>Ceriodaphnia</i> Survival:	100%	1.0
<i>Ceriodaphnia</i> Reproduction:	100%	1.0

Quality Control: Reviewed and approved by:


Joseph A. LeMay
Laboratory Director

**CERIODAPHNIA CHRONIC BIOASSAY
EPA METHOD 1002.0**



Lab No.: A-14121306-001
Client/ID: TestAmerica – Outfall 008

Date Tested: 12/13/14 to 12/20/14

TEST SUMMARY

Test type: Daily static-renewal.
Species: *Ceriodaphnia dubia*.
Age: < 24 hrs; all released within 8 hrs.
Test vessel size: 30 ml.
Number of test organisms per vessel: 1.
Temperature: 25 +/- 1°C.
Dilution water: Mod. hard reconstituted (MHRW).
QA/QC Batch No.: RT-141203.

Endpoints: Survival and Reproduction.
Source: In-laboratory culture.
Food: .1 ml YTC, algae per day.
Test solution volume: 15 ml.
Number of replicates: 10.
Photoperiod: 16/8 hrs. light/dark cycle.
Test duration: 7 days.
Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survival	Mean Number of Young Per Female
Control	100%	28.9
100% Sample	100%	34.0
Sample not statistically significantly less than Control for either endpoint.		

CHRONIC TOXICITY

Survival NOEC	100%
Survival T _{Uc}	1.0
Reproduction NOEC	100%
Reproduction T _{Uc}	1.0

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥80%	Pass (100% survival)
> 15 young per surviving control female	Pass (28.9 young)
>60% surviving controls had 3 broods	Pass (100% with 3 broods)
PMSD <47% for reproduction; if >47% and no toxicity at IWC, the test must be repeated	Pass (PMSD = 9.1%)
Statistically significantly different concentrations relative difference >13%	Pass (no concentration significantly different)
Concentration response relationship acceptable	Pass (no significant response at concentration tested)

Ceriodaphnia Survival and Reproduction Test-7 Day Survival

Start Date: 12/13/2014 14:00 Test ID: 14121306c Sample ID: Outfall 008
 End Date: 12/20/2014 14:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater
 Sample Date: 12/12/2014 15:17 Protocol: EPAFW02-821-R-02-013 Test Species: CD-Ceriodaphnia dubia

Comments:

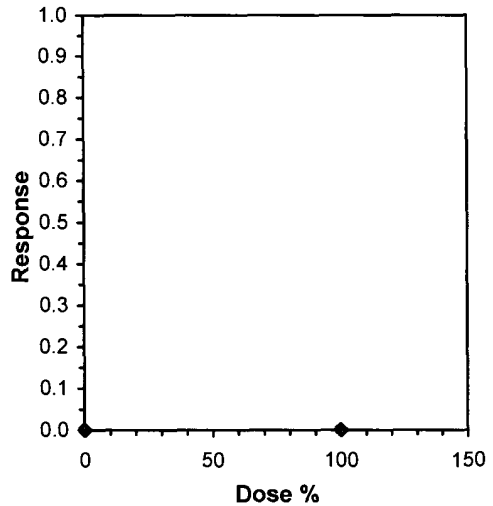
Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Conc-%	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical	Isotonic	
									Mean	N-Mean
D-Control	1.0000	1.0000	0	10	10	10			1.0000	1.0000
100	1.0000	1.0000	0	10	10	10	1.0000	0.0500	1.0000	1.0000

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	100	>100		1
Treatments vs D-Control				

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Ceriodaphnia Survival and Reproduction Test-Reproduction

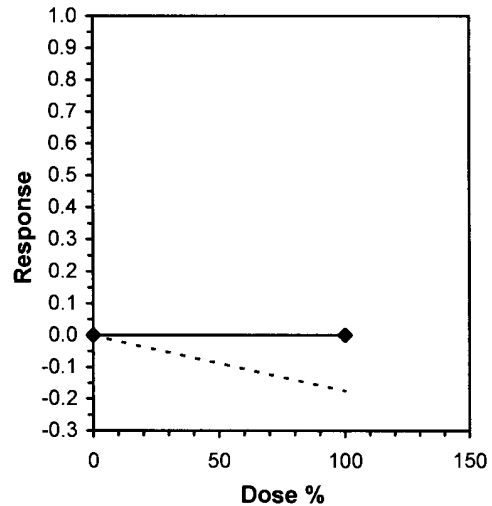
Start Date: 12/13/2014 14:00 Test ID: 14121306c Sample ID: Outfall 008
 End Date: 12/20/2014 14:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater
 Sample Date: 12/12/2014 15:17 Protocol: EPAFW02-821-R-02-013 Test Species: CD-Ceriodaphnia dubia
 Comments:

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	34.000	30.000	27.000	26.000	26.000	34.000	30.000	28.000	27.000	27.000
100	34.000	34.000	27.000	36.000	29.000	37.000	36.000	39.000	32.000	36.000

Conc-%	Mean	N-Mean	Transform: Untransformed					N	t-Stat	1-Tailed Critical	MSD	Isotonic	
			Mean	Min	Max	CV%	Mean					N-Mean	
D-Control	28.900	1.0000	28.900	26.000	34.000	10.502	10				31.450	1.0000	
100	34.000	1.1765	34.000	27.000	39.000	10.917	10	-3.364	1.734	2.629	31.450	1.0000	

Auxiliary Tests	Statistic	Critical	Skew	Kurt		
Shapiro-Wilk's Test indicates normal distribution ($p > 0.05$)	0.96297	0.905	-0.1662	-0.2902		
F-Test indicates equal variances ($p = 0.56$)	1.49578	6.54109				
Hypothesis Test (1-tail, 0.05)	MSDu	MSDp	MSB	MSE	F-Prob	df
Homoscedastic t Test indicates no significant differences Treatments vs D-Control	2.6292	0.09098	130.05	11.4944	0.00346	1, 18

Point	%	SD	Linear Interpolation (200 Resamples)	
			95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



CERIODAPHNIA DUBIA CHRONIC BIOASSAY
EPA METHOD 1002.0 Raw Data Sheet



Lab No.: A-14121306-001

Client ID: TestAmerica - Outfall 008

Start Date: 12/13/2014

		DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7	
		0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr
Analyst Initials:		Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Time of Readings:		14W	14W	14W	13W	13W	4W	14W	14W	14W	14W	14W	14W	14W	14W
Control	DO	8.1	7.9	8.2	8.2	8.2	7.9	8.1	8.3	8.2	7.8	8.1	8.0	8.3	8.3
	pH	8.0	8.1	8.1	8.0	8.1	7.9	8.2	8.0	8.0	8.1	7.9	8.1	8.0	8.0
	Temp	24.9	24.9	24.9	24.7	24.9	24.8	24.8	24.8	24.8	24.8	24.9	24.9	24.7	24.9
100%	DO	8.3	8.2	8.2	8.0	8.0	7.9	8.2	8.1	8.4	8.2	8.2	8.1	8.3	8.1
	pH	7.9	7.9	7.9	7.9	8.0	7.8	7.9	7.9	8.0	8.1	7.8	8.0	8.1	8.1
	Temp	24.8	24.9	24.9	24.7	24.6	24.8	24.8	24.8	24.8	24.9	24.8	24.8	24.8	24.8

Additional Parameters	Control	100% Sample
Conductivity (umohms)	338	147
Alkalinity (mg/l CaCO ₃)	55	31
Hardness (mg/l CaCO ₃)	92	61
Ammonia (mg/l NH ₃ -N)	0.1	0.2

Source of Neonates											
Replicate:	A	B	C	D	E	F	G	H	I	J	
Brood ID:	1A	1B	2P	1G	3G	2H	3H	4D	5D	6G	

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
Control	1	0	0	0	0	0	0	0	0	0	0	0	10	Z
	2	0	0	0	0	0	0	0	0	0	0	0	10	Z
	3	0	5	0	0	4	4	4	3	0	0	20	10	Z
	4	5	0	2	3	0	0	0	0	4	3	17	10	Z
	5	10	9	7	9	8	10	9	7	6	7	82	10	Z
	6	0	16	0	14	0	0	17	0	17	0	64	10	Z
	7	19	(15)	18	0	14	20	0	18	0	17	106	10	Z
	Total	34	30	27	26	26	34	30	28	27	27	289	10	Z
100%	1	0	0	0	0	0	0	0	0	0	0	0	10	Z
	2	0	0	0	0	0	0	0	0	0	0	0	10	Z
	3	0	5	0	0	0	0	0	0	0	4	9	10	Z
	4	4	0	4	5	4	5	3	4	5	0	34	10	Z
	5	11	7	9	12	9	12	11	11	8	14	104	10	Z
	6	19	22	14	19	16	20	22	24	19	18	193	10	Z
	7	0	(19)	0	(19)	0	(19)	(17)	0	0	(19)	0	10	Z
	Total	34	34	27	36	29	37	36	39	32	36	340	10	Z

Circled fourth brood not used in statistical analysis.

7th day only used if <60% of the surviving control females have produced their third brood.

TestAmerica Irvine
 17461 Denan Ave Suite 100
 Irvine, CA 92614-5817
 Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab) Sampler: Wilson, Debby S Phone: debby.wilson@testamericainc.com E-Mail: debby.wilson@testamericainc.com		Lab P#: Wilson, Debby S Camer Tracking No(s):		COC No: 440-70163.1 Page: Page 1 of 1 Job #: 440-98457-1	
Shipping/Receiving Company: Aquatic Testing Laboratories Address: 4350 Transport #107, City: Ventura State Zip: CA, 93003 Phone: Email:		Analysis Requested Date Requested: 12/29/2014 TAT Requested (days): PO #: WO #: Project #: 44009879 SSON#:		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 Other: 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 Z - other (specify)	
Sample Identification - Client ID (Lab ID) Outfall_008_20141212 (440-96606-1)		Sample Date 12/12/14		Sample Time 15:17 Pacific	
Sample Type (Caconc, G-grab) G-grab		Matrix (Hydro, Swab, Over-slab, Other) Water		Special Instructions/Note:	
Possible Hazard Identification Unclassified Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		Special Instructions/OC Requirements:	
Empty Kit Relinquished by:		Date:		Method of Shipment:	
Relinquished by: <i>[Signature]</i>		Date/Time:		Received by: <i>[Signature]</i>	
Relinquished by:		Date/Time:		Received by:	
Relinquished by:		Date/Time:		Received by:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 2.2	



CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich 9040 Friars Road Suite 220 San Diego, CA 92108-5860		Project: Boeing-SRFL NPDES Annual and Routine Outfall 008 COMPOSITE Stormwater at Happy Valley	
Test America Contact: Debby Wilson		Phone Number: 619.285.7132, 858.337.4061 (cell) Field Manager: Jeff Bannon 818.350.7340, 818.414.5608 (cell)	
Sample Description	Sample Matrix	Container Type	# of Con.
Outfall 008	W	1L Poly	1
Outfall 008	W	1L Amber	2
Outfall 008	W	500 mL Poly	2
Outfall 008	W	500 mL Poly	1
Outfall 008	W	1L Poly	1
Outfall 008	W	2.5 Gall Cube	1
Outfall 008	W	500 mL Amber	1
Outfall 008	W	1 Gal Poly	1
Outfall 008	W	500 mL Poly	1
Outfall 008	W	500 mL Poly	1
Outfall 008	W	500 mL Poly	1
Outfall 008	W	1L Poly	1
Outfall 008	W	1L Amber	2
Outfall 008	W	1L Amber	2
Outfall 008	W	1L Poly	1
Outfall 008	W	1L Amber	2

Sample I.D.	12/12/14 / 1517
Sampling Date/Time	
Preservative	HNO ₃ 2A ✓ None 3A, 3B ✓ None 4A, 4B ✓ None 5 ✓ None 6 ✓ None 7A ✓ None 7B ✓ None 8 ✓ None 9 ✓ H ₂ SO ₄ 10 ✓ NaOH 11 ✓ None 20 ✓ None 16A, 16B ✓ None 16A, 16B ✓ None 5 ✓ HCl 16M/16B ✓
Boils #	2A ✓ 3A, 3B ✓ 4A, 4B ✓ 5 ✓ 6 ✓ 7A ✓ 7B ✓ 8 ✓ 9 ✓ 10 ✓ 11 ✓ 20 ✓ 16A, 16B ✓ 16A, 16B ✓ 5 ✓ 16M/16B ✓

Project Manager: Nancy Gardner
Sampler: P. BERSON
C. JOHNSON

ANALYSIS REQUIRED			
Sample	Matrix	Container	Analysis
Outfall 008	W	1L Poly	Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Tl, Se, Zn
Outfall 008	W	1L Amber	TSS
Outfall 008	W	500 mL Poly	Chromium (Total)
Outfall 008	W	500 mL Poly	Chromium (Hexavalent)
Outfall 008	W	1L Poly	Lead (Pb)
Outfall 008	W	1L Amber	Cadmium (Cd)
Outfall 008	W	1L Amber	Chlorophyll a
Outfall 008	W	1L Amber	Chlorophyll b
Outfall 008	W	1L Amber	Chlorophyll c
Outfall 008	W	1L Amber	Chlorophyll d
Outfall 008	W	1L Amber	Chlorophyll e
Outfall 008	W	1L Amber	Chlorophyll f
Outfall 008	W	1L Amber	Chlorophyll g
Outfall 008	W	1L Amber	Chlorophyll h
Outfall 008	W	1L Amber	Chlorophyll i
Outfall 008	W	1L Amber	Chlorophyll j
Outfall 008	W	1L Amber	Chlorophyll k
Outfall 008	W	1L Amber	Chlorophyll l
Outfall 008	W	1L Amber	Chlorophyll m
Outfall 008	W	1L Amber	Chlorophyll n
Outfall 008	W	1L Amber	Chlorophyll o
Outfall 008	W	1L Amber	Chlorophyll p
Outfall 008	W	1L Amber	Chlorophyll q
Outfall 008	W	1L Amber	Chlorophyll r
Outfall 008	W	1L Amber	Chlorophyll s
Outfall 008	W	1L Amber	Chlorophyll t
Outfall 008	W	1L Amber	Chlorophyll u
Outfall 008	W	1L Amber	Chlorophyll v
Outfall 008	W	1L Amber	Chlorophyll w
Outfall 008	W	1L Amber	Chlorophyll x
Outfall 008	W	1L Amber	Chlorophyll y
Outfall 008	W	1L Amber	Chlorophyll z

Received By: STS	Date/Time: 12/13/14 10:24
Received By: Staffio NABI	Date/Time: 12/13/14 11:40
Received By: Latif	Date/Time: 12/13/14 11:45

Legend: R = Routine, A = Annual

These must be added to the same work order for COC Page 1 of 2 for Outfall 008 for the same event.

11345
UTC Station NABI JCA



REFERENCE TOXICANT DATA

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

CERIODAPHNIA CHRONIC BIOASSAY
EPA METHOD 1002.0
REFERENCE TOXICANT - NaCl



QA/QC Batch No.: RT-141203

Date Tested: 12/03/14 to 12/10/14

TEST SUMMARY

Test type: Daily static-renewal.
 Species: *Ceriodaphnia dubia*.
 Age: <24 hrs; all released within 8 hrs.
 Test vessel size: 30 ml.
 Number of test organisms per vessel: 1.
 Temperature: 25 +/- 1°C.
 Dilution water: Mod. hard reconstituted (MHRW).
 Reference Toxicant: Sodium chloride (NaCl).

Endpoints: Survival and Reproduction.
 Source: In-laboratory culture.
 Food: .1 ml YTC, algae per day.
 Test solution volume: 20 ml.
 Number of replicates: 10.
 Photoperiod: 16/8 hrs. light/dark cycle.
 Test duration: 7 days.
 Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survival		Mean Number of Young Per Female	
Control	100%		26.9	
0.25 g/L	100%		28.1	
0.5 g/L	100%		27.0	
1.0 g/L	100%		18.0	*
2.0 g/L	90%		2.3	*
4.0 g/L	0%	*	0	**

* Statistically significantly less than control at P = 0.05 level
 ** Reproduction data from concentrations greater than survival NOEC are excluded from statistical analysis.

CHRONIC TOXICITY

Survival LC50	2.6 g/l
Reproduction IC25	0.85 g/l

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥ 80%	Pass (100% Survival)
≥ 15 young per surviving control female	Pass (26.9 young)
≥ 60% surviving controls had 3 broods	Pass (100% with 3 broods)
PMSD < 47% for reproduction	Pass (PMSD = 8.0%)
Stat. sig. diff. conc. relative difference > 13%	Pass (Stat. sig. diff. conc. Relative difference = 33.1%)
Concentration response relationship acceptable	Pass (Response curve normal)

Ceriodaphnia Survival and Reproduction Test-7 Day Survival

Start Date: 12/3/2014 14:00 Test ID: RT141203c Sample ID: REF-Ref Toxicant
 End Date: 12/10/2014 13:30 Lab ID: CAATL-Aquatic Testing Labs Sample Type: NACL-Sodium chloride
 Sample Date: 12/3/2014 Protocol: EPAFW02-821-R-02-013 Test Species: CD-Ceriodaphnia dubia
 Comments:

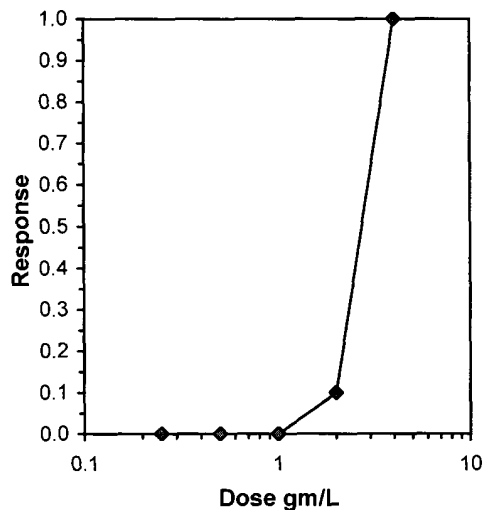
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Conc-gm/L	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical	Number Resp	Total Number
D-Control	1.0000	1.0000	0	10	10	10			0	10
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
1	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
2	0.9000	0.9000	1	9	10	10	0.5000	0.0500	1	10
4	0.0000	0.0000	10	0	10	10			10	10

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	2	4	2.82843	
Treatments vs D-Control				

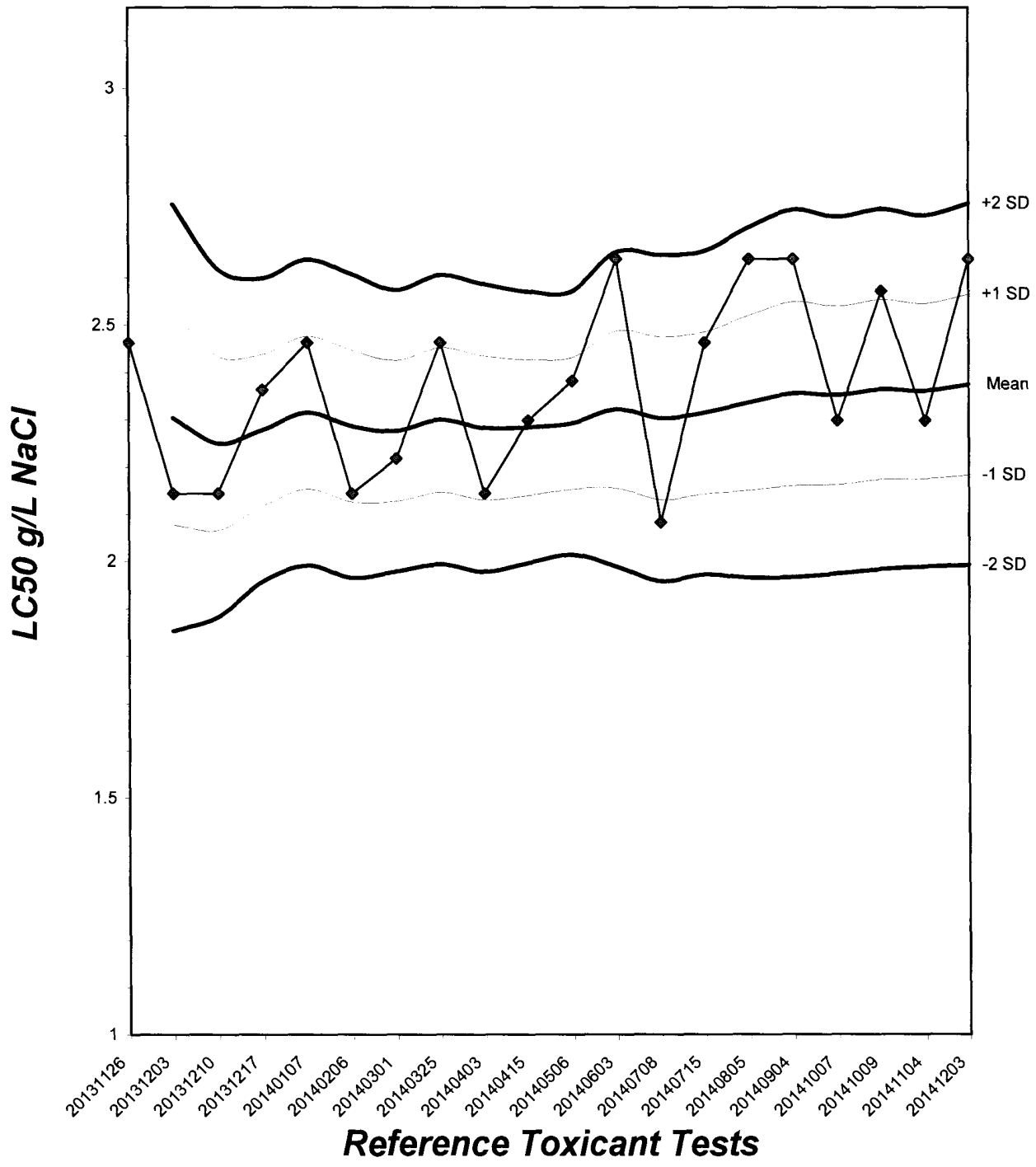
Trimmed Spearman-Kärber

Trim Level	EC50	95% CL	
0.0%	2.6390	2.3138	3.0099
5.0%	2.6984	2.2899	3.1798
10.0%	2.7216	2.5094	2.9517
20.0%	2.7216	2.5094	2.9517
Auto-0.0%	2.6390	2.3138	3.0099



Ceriodaphnia Chronic Survival Laboratory Control Chart

CV% = 8.03



- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Ceriodaphnia Survival and Reproduction Test-Reproduction

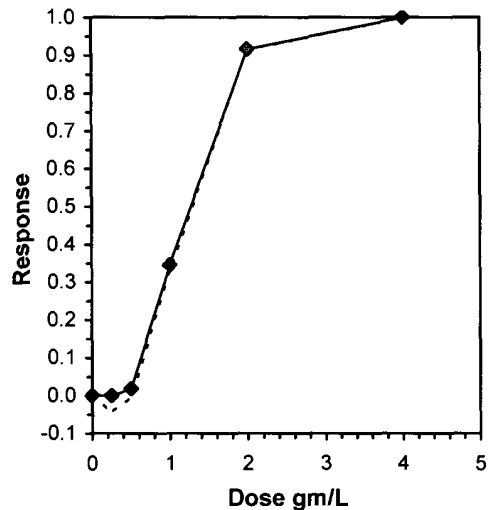
Start Date: 12/3/2014 14:00 Test ID: RT141203c Sample ID: REF-Ref Toxicant
 End Date: 12/10/2014 13:30 Lab ID: CAATL-Aquatic Testing Labs Sample Type: NAACL-Sodium chloride
 Sample Date: 12/3/2014 Protocol: EPAFW02-821-R-02-013 Test Species: CD-Ceriodaphnia dubia
 Comments:

Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	29.000	26.000	28.000	26.000	27.000	25.000	26.000	22.000	27.000	33.000
0.25	25.000	30.000	29.000	28.000	30.000	30.000	28.000	30.000	26.000	25.000
0.5	28.000	27.000	30.000	27.000	24.000	27.000	29.000	27.000	28.000	23.000
1	18.000	19.000	18.000	17.000	21.000	15.000	18.000	19.000	19.000	16.000
2	0.000	2.000	2.000	2.000	6.000	2.000	2.000	2.000	0.000	5.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Conc-gm/L	Mean	N-Mean	Transform: Untransformed				N	t-Stat	1-Tailed Critical	MSD	Isotonic	
			Mean	Min	Max	CV%					Mean	N-Mean
D-Control	26.900	1.0000	26.900	22.000	33.000	10.580	10				27.500	1.0000
0.25	28.100	1.0446	28.100	25.000	30.000	7.399	10	-1.242	2.223	2.147	27.500	1.0000
0.5	27.000	1.0037	27.000	23.000	30.000	7.808	10	-0.104	2.223	2.147	27.000	0.9818
*1	18.000	0.6691	18.000	15.000	21.000	9.443	10	9.215	2.223	2.147	18.000	0.6545
*2	2.300	0.0855	2.300	0.000	6.000	82.111	10	25.469	2.223	2.147	2.300	0.0836
4	0.000	0.0000	0.000	0.000	0.000	0.000	10				0.000	0.0000

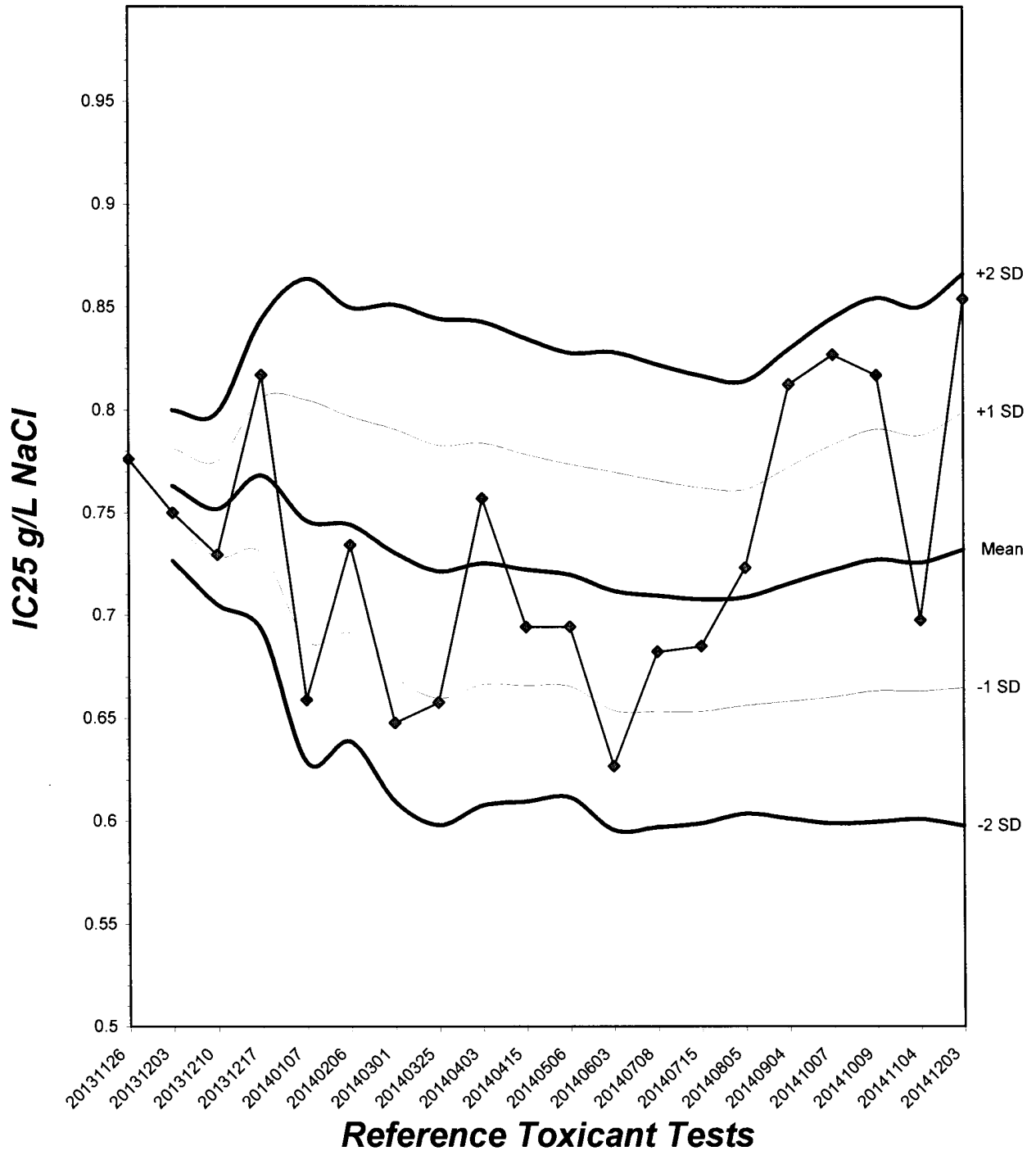
Auxiliary Tests	Statistic	Critical	Skew	Kurt						
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.97547	0.947	0.13437	0.79031						
Bartlett's Test indicates equal variances (p = 0.60)	2.75789	13.2767								
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	0.5	1	0.70711		2.14743	0.07983	1196.13	4.66444	2.4E-30	4, 45
Treatments vs D-Control										

Point	gm/L	SD	95% CL		Skew
			Lower	Upper	
IC05	0.5486	0.0565	0.4009	0.5821	-3.1255
IC10	0.6250	0.0323	0.5424	0.6654	-0.9276
IC15	0.7014	0.0307	0.6298	0.7507	-0.6185
IC20	0.7778	0.0309	0.7171	0.8343	-0.2564
IC25	0.8542	0.0327	0.7943	0.9179	0.0400
IC40	1.0955	0.0399	1.0217	1.1692	-0.1435
IC50	1.2707	0.0342	1.2093	1.3340	-0.1116



Ceriodaphnia Chronic Reproduction Laboratory Control Chart

CV% = 9.16



CERIODAPHNIA DUBIA CHRONIC BIOASSAY
Reference Toxicant - NaCl
Reproduction and Survival Raw Data Sheet



QA/QC No.: RT-141203

Start Date: 12/03/2014

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
Control	1	0	0	0	0	0	0	0	0	0	0	0	10	h
	2	0	0	0	0	0	0	0	0	0	0	0	10	h
	3	5	4	4	3	3	3	5	2	3	0	32	10	h
	4	8	8	7	6	8	8	6	0	6	5	62	10	h
	5	0	14	0	0	0	0	0	6	0	12	32	10	h
	6	16	0	17	0	0	14	15	0	0	0	62	10	h
	7	18	19	17	17	16	16	18	14	18	16	81	10	h
	Total	29	26	28	26	27	25	26	22	27	33	269	10	h
0.25 g/l	1	0	0	0	0	0	0	0	0	0	0	10	h	
	2	0	0	0	0	0	0	0	0	0	0	10	h	
	3	5	4	3	5	3	5	3	5	4	2	39	10	h
	4	8	10	9	7	9	8	7	9	8	9	84	10	h
	5	0	16	0	0	0	0	0	16	0	14	46	10	h
	6	12	0	17	16	18	17	18	0	14	0	112	10	h
	7	17	18	19	0	19	0	19	19	0	15	0	10	h
	Total	25	30	29	28	30	30	28	30	26	25	281	10	h
0.5 g/l	1	0	0	0	0	0	0	0	0	0	0	10	h	
	2	0	0	0	0	0	0	0	0	0	0	10	h	
	3	4	3	5	4	4	3	4	4	3	2	36	10	h
	4	8	9	10	9	8	8	10	7	8	7	84	10	h
	5	0	0	0	0	0	0	0	16	0	14	30	10	h
	6	16	15	15	14	12	16	15	0	17	0	120	10	h
	7	14	16	18	17	16	19	18	16	15	0	0	10	h
	Total	28	27	30	27	24	27	29	27	28	23	270	10	h

Circled fourth brood not used in statistical analysis.
 7th day only used if <60% of the surviving control females have produced their third brood.

CERIODAPHNIA DUBIA CHRONIC BIOASSAY
Reference Toxicant - NaCl
Reproduction and Survival Raw Data Sheet



QA/QC No.: RT-141203

Start Date: 12/03/2014

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
1.0 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	[Signature]
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	3	2	5	4	2	0	3	2	4	0	25	10	
	4	6	7	6	6	5	3	5	5	7	3	53	10	
	5	0	10	0	0	0	0	0	12	0	6	28	10	
	6	0	0	0	0	0	0	0	0	0	0	0	10	
	7	9	(6)	7	7	14	12	10	(6)	8	7	74	10	
	Total	18	19	18	17	21	15	18	19	19	16	180	10	
2.0 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	[Signature]
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	2	2	0	0	0	0	0	0	4	10	
	4	0	0	0	0	0	0	0	2	0	2	4	10	
	5	0	0	0	0	0	0	0	0	0	3	3	10	
	6	0	0	0	0	2	2	0	0	0	0	4	10	
	7	X	2	0	0	4	0	2	0	0	0	8	9	
	Total	0	2	2	2	6	2	2	2	0	5	23	9	
4.0 g/l	1	X	X	X	X	X	X	X	X	X	X	0	0	[Signature]
	2	-	-	-	-	-	-	-	-	-	-	-	-	
	3	-	-	-	-	-	-	-	-	-	-	-	-	
	4	-	-	-	-	-	-	-	-	-	-	-	-	
	5	-	-	-	-	-	-	-	-	-	-	-	-	
	6	-	-	-	-	-	-	-	-	-	-	-	-	
	7	-	-	-	-	-	-	-	-	-	-	-	-	
	Total	0	0	0	0	0	0	0	0	0	0	0	0	

Circled fourth brood not used in statistical analysis.
 7th day only used if <60% of the surviving control females have produced their third brood.

CERIODAPHNIA DUBIA CHRONIC BIOASSAY
Reference Toxicant - NaCl
Water Chemistries Raw Data Sheet



QA/QC No.: RT-141203

Start Date: 12/03/2014

		DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7	
		Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Analyst Initials:		Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Time of Readings:		1400	1400	1400	1400	1400	1400	1400	1400	1400	1330	1330	1330	1330	1330
Control	DO	8.1	8.0	8.3	7.9	8.1	8.0	8.1	8.0	8.2	8.2	8.6	8.1	8.2	8.0
	pH	7.9	7.9	7.8	8.1	8.0	8.0	8.1	8.1	8.1	8.1	8.1	8.0	8.0	8.1
	Temp	25.1	25.0	25.1	25.0	25.1	24.8	25.0	24.9	24.9	25.0	25.1	25.0	25.0	25.1
0.25 g/l	DO	8.2	8.0	8.2	7.9	8.0	8.0	8.1	8.0	8.1	8.2	8.7	8.0	8.2	8.1
	pH	7.8	7.9	7.8	8.0	7.9	8.0	7.9	8.0	8.0	8.1	8.1	8.0	7.8	8.1
	Temp	25.1	25.0	25.1	25.0	25.1	24.9	25.0	24.8	25.0	25.0	25.0	24.9	25.0	25.0
0.5 g/l	DO	8.2	8.1	8.3	7.9	8.2	8.0	8.0	8.0	8.2	8.2	8.7	8.3	7.9	8.0
	pH	7.9	7.9	7.8	8.0	7.9	7.9	8.0	8.1	8.1	8.1	8.0	8.0	7.7	8.0
	Temp	25.1	25.1	25.1	25.0	25.0	24.9	25.0	24.9	25.0	25.0	24.9	24.8	24.8	25.0
1.0 g/l	DO	8.3	8.1	7.8	8.0	8.1	7.6	7.8	7.8	8.0	8.2	8.6	8.2	8.4	8.1
	pH	7.9	7.9	7.9	8.0	7.9	7.9	8.0	8.1	8.0	8.0	8.1	8.0	7.9	8.1
	Temp	25.1	25.0	25.1	24.9	25.0	25.0	25.0	24.9	24.9	25.2	25.0	24.8	25.0	25.0
2.0 g/l	DO	8.4	8.1	8.3	8.0	8.1	7.7	8.1	7.9	8.3	8.0	8.4	8.1	7.8	8.0
	pH	7.9	7.8	7.8	7.8	8.0	8.1	8.0	8.1	8.0	8.0	8.1	8.1	7.8	8.1
	Temp	25.0	25.1	25.1	24.9	25.0	24.8	25.0	24.9	25.0	25.2	24.6	24.8	24.7	25.0
4.0 g/l	DO	8.4	7.8	8.4	-	-	-	-	-	-	-	-	-	-	-
	pH	7.9	7.8	7.8	-	-	-	-	-	-	-	-	-	-	-
	Temp	25.1	25.1	25.2	-	-	-	-	-	-	-	-	-	-	-

Dissolved Oxygen (DO) readings are in mg/l O₂; Temperature (Temp) readings are in °C.

Additional Parameters	Control			High Concentration		
	Day 1	Day 3	Day 5	Day 1	Day 3	Day 5
Conductivity (µS)	295	310	309	6541	3471	3349
Alkalinity (mg/l CaCO ₃)	56	56	55	56	56	56
Hardness (mg/l CaCO ₃)	93	92	92	92	92	92

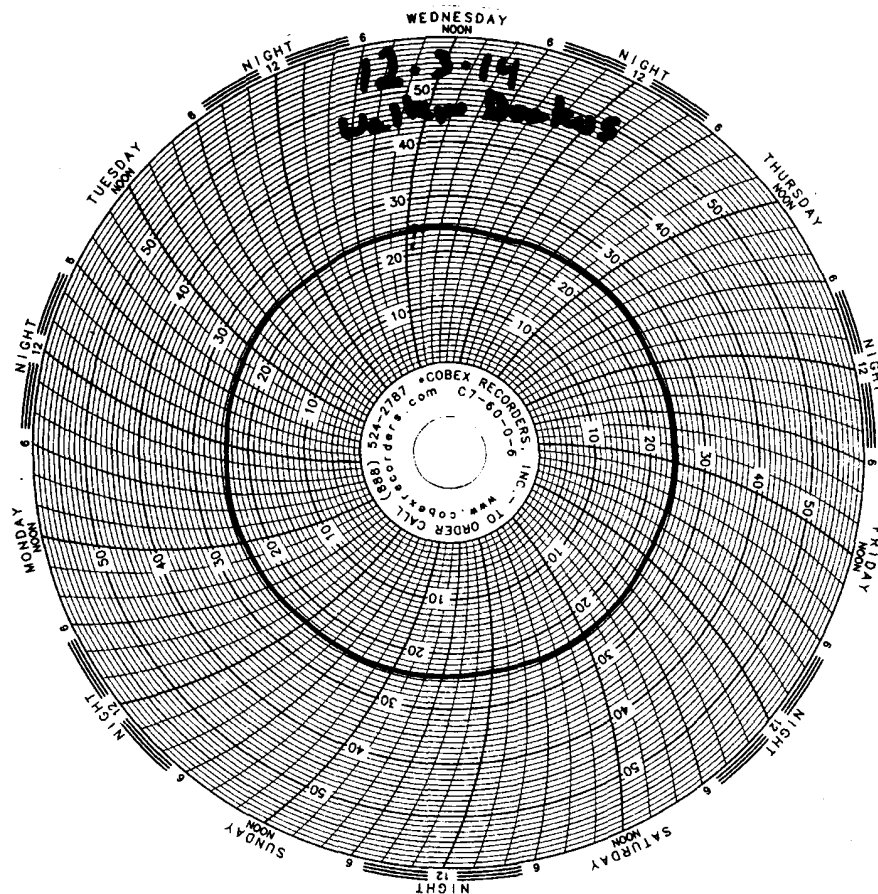
Source of Neonates										
Replicate:	A	B	C	D	E	F	G	H	I	J
Brood ID:	1A	3A	2B	3B	1C	3C	1D	1E	3E	2G

Test Temperature Chart

Test No: RT-141203

Date Tested: 12/03/14 to 12/10/14

Acceptable Range: 25 +/- 1°C



H4L160432 Analytical Report..... 1
Sample Receipt Documentation 16





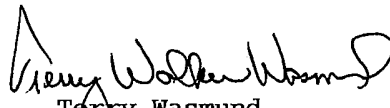
TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 440-96606-1
Annual and Routine Outfall 008
Lot #: H4L160432

Debby Wilson
TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817

TESTAMERICA LABORATORIES, INC.



Terry Wasmund
Project Manager

January 13, 2015

ANALYTICAL METHODS SUMMARY

H4L160432

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>
Dioxins/Furans, HRGC/HRMS	EPA-5 1613B

References:

EPA-5 "Method 1613: Tetra- through Octa- Chlorinated Dioxins and Furans by Isotope Dilution, HRGC/HRMS, Revision B", EPA, OCTOBER 1994

SAMPLE SUMMARY

H4L160432

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT SAMPLE ID</u>	<u>SAMPLED DATE</u>	<u>SAMP TIME</u>
M5Q2F	001	OUTFALL_008_20141212	12/12/14	15:17

NOTE (S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

PROJECT NARRATIVE H4L160432

The results reported herein are applicable to the samples submitted for analysis only. If you have any questions about this report, please call (865) 291-3000 to speak with the TestAmerica project manager listed on the cover page.

This report shall not be reproduced except in full, without the written approval of the laboratory.

The original chain of custody documentation is included with this report.

Sample Receipt

There were no problems with the condition of the samples received.

Quality Control and Data Interpretation

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

The following flags are used to qualify results for chlorinated dioxin and furan results:

J – The reported result is an estimate. The amount reported is below the Minimum Level (ML). The qualitative definition of the ML is “the lowest level at which the analytical system must give a reliable signal and an acceptable calibration point”. The ML was introduced in EPA Methods 1624 and 1625 in 1980 and was promulgated in these methods in 1984 at 40 CFR Part 136, Appendix A. For the purposes of this report, the ML is qualitatively defined as described above, and quantitatively defined as follows:

Minimum Level: The concentration or mass of analyte in the sample that corresponds to the lowest calibration level in the initial calibration. It represents a concentration (in the sample extract) equivalent to that of the lowest calibration standard, after corrections for method-specified sample weights, volumes and cleanup procedures has been employed.

Example: The lowest calibration level for TCDD in the initial calibration is 0.5 pg/uL. A mass of 10 pg of 2,3,7,8-TCDD in the sample would result in a concentration of 0.5 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample extract corresponds to the concentration in the lowest calibration standard, the 10 pg mass in the sample components is the ML. If the sample extract is further diluted, the ML will increase by the dilution factor.

Example: A 1/10 dilution is performed on the sample extract described above. The ML for 2,3,7,8-TCDD becomes 100 pg rather than the default of 10 pg.

E – The reported result is an estimate. The amount reported is above the Upper Calibration Level (UCL) described below. The quantitative definition of the UCL is listed below:

Upper Calibration Level: The concentration or mass of analyte in the sample that corresponds to the highest calibration level in the initial calibration. It is equivalent to the

PROJECT NARRATIVE H4L160432

concentration of the highest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed.

Example: The maximum calibration level for TCDD in the initial calibration is 200 pg/uL. A mass of 4000 pg of 2,3,7,8-TCDD in the sampling components would result in a concentration of 200 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample extract corresponds to the concentration in the highest calibration standard, the 4000 pg mass in the sample components is the UCL. If the sample extract is further diluted, the ML will increase by the dilution factor.

Example: A 1/10 dilution is performed on the sample extract described above. The UCL for 2,3,7,8-TCDD becomes 40,000 pg rather than the default of 4000 pg. In this example, all positive 2,3,7,8-TCDD results above 40,000 pg are flagged with an E.

B – The analyte is present in the associated method blank at a detectable level. For this analysis, there is no method specified reporting level other than the qualitative criterion that peaks must exhibit a signal-to-noise ratio of ≥ 2.5 to 1. Therefore, the presence of any reportable amount of the analyte in the blank will result in a B qualifier on all associated samples.

Q – Estimated maximum possible concentration. This qualifier is used when the result is generated from chromatographic data that does not meet all the qualitative criteria for a positive identification given in the method. These criteria include the following:

- Ion abundance ratios must be within specified limits ($\pm 15\%$ of theoretical ion abundance ratio).
- Retention time criteria (relative to the method-specified isotope labeled retention time standard).
- Co-maximization criterion. The two quantitation ion peaks must reach their maxima within 2 seconds of each other.
- Polychlorinated dibenzofuran purity. No peak can be identified as a polychlorinated dibenzofuran if a polychlorinated diphenyl ether peak maximizes within ± 2 seconds of the furan candidate.

S – Ion suppression evident. The trace indicating the signal from the lock mass of the calibration compound shows a deflection at the retention time of the analyte. This may indicate a temporary suppression of the instrument sensitivity due to a matrix-borne interference.

C – Coeluting Isomer. The isomer is known to coelute with another member of its homologue group, or the peak shape is shouldered, indicating the likelihood of a coeluting isomer.

X – Other. See explanation in narrative.

Laboratory studies supporting risk assessment and Total Maximum Daily Load (TMDL) evaluations, frequently use qualified data reported as low as the Method Detection Limit (MDL), or the Estimated Detection Limit (EDL). Several of EPA's isotope dilution methods employ the EDL.^{1,2,3} The EDL is based on a direct measurement of the signal-to-noise (S/N) ratio acquired

PROJECT NARRATIVE H4L160432

during sample analysis. This S/N measurement is used to calculate the concentration in the sample corresponding to the minimum intensity of the smallest quantifiable peak. The EDL reflects the amount of the particular analyte which would be required to cause a positive result for the particular analysis. Because the S/N obtained covaries with recovery, instrument sensitivity and sample-specific cleanup efficacy, the EDL is a more valid measure of the sensitivity of the entire analytical process for the specific sample than is an MDL run periodically on a reference matrix.

The EDL is typically calculated according to the following equation:

$$\text{Estimated Detection Limit} = \frac{N \times 2.5 \times Q_{is}}{H_{is} \times RRF \times W \times S}$$

Where:

- N = peak to peak noise of quantitation ion signal in the region of the ion chromatogram where the compound of interest is expected to elute
- H_{is} = peak height of quantitation ion for appropriate internal standard
- Q_{is} = ng of internal standard added to sample
- RRF = mean relative response factor of compound obtained during initial calibration
- W = amount of sample extracted (grams or liters)
- S = percent solids (optional, if results are requested to be reported on dry weight basis)

(The area of the internal standard is sometimes used instead of height, along with an area-to-height conversion factor.)

This method of estimating the detection limit differs from the MDL in that it does not carry the requirement that the sample be statistically distinguished as being from a contaminated population. As results approach the EDL, the risk of false positives and the analytical uncertainty increase significantly. However, a low false positive well below the ML or MDL is often closer to the true value than an assumption that the target analyte is present at the detection or reporting limits. For relatively clean samples, MDL studies may give an elevated estimate of the detection limit. Additionally, on contaminated samples, the MDL may give a falsely low estimate of the detection limit.

$$\text{Analyte Concentration} = \frac{A_s \times Q_{is}}{A_{is} \times RRF \times W \times S}$$

Where:

- A_s = Sum of areas of the target peaks
- Q_{is} = ng of internal standard added to sample
- A_{is} = Sum of areas of the internal standard peaks
- RRF = mean relative response factor of compound obtained during initial calibration
- W = amount of sample extracted (grams or liters)
- S = percent solids (optional, if results are requested to be reported on dry weight basis)

PROJECT NARRATIVE H4L160432

In sample data, peaks must have an intensity of ≥ 2.5 times the height of the background noise in order to be considered. Careful examination of the two equations above reveals that for the concentration of the smallest peak detectable (per the EDL equation) to exactly equal the smallest peaks that are calculated, requires that the average height to area ratio obtained during the calibration must equal the area to height ratio for every peak obtained near 2.5 times the noise. When the area to height ratio on a peak in a sample is less than the average obtained during calibration, the calculated result will correspond to a peak that would have been less than 2.5 times the noise on the calibration. This is the result of normal variability. Because the source methods for the EDL (SW-846 8290 and 8280A) do not provide for censoring of results by any other magnitude standard than being 2.5 times the noise, the laboratory does not censor at the calculated EDL. Hence, detections may be reported below the estimated detection limits.

Footnotes:

1. Code of Federal Regulations, Part 136, Chapter 1, Appendix 1, October 1994: Method 1613 Tetra- Through Octa-Chlorinated Dioxins and Furans by Isotope Dilution High Resolution Gas Chromatography/High Resolution Mass Spectrometry.
2. U.S. EPA. Test Methods for Evaluating Solid Waste, Volume II, SW-846, Update III, December 1996. Method 8280A: The Analysis of Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by High Resolution Gas Chromatography/Low Resolution Mass Spectrometry.
3. U.S. EPA. Test Methods for Evaluating Solid Waste, SW-846. Third Edition. March 1995 Method 8290: Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by High Resolution Gas Chromatography/High Resolution Mass Spectrometry.

CERTIFICATION SUMMARY

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Knoxville	L-A-B	DoD ELAP		L2311
TestAmerica Knoxville	Arkansas DEQ	State Program	6	88-0688
TestAmerica Knoxville	California	State Program	9	2423
TestAmerica Knoxville	Colorado	State Program	8	N/A
TestAmerica Knoxville	Connecticut	State Program	1	PH-0223
TestAmerica Knoxville	Florida	NELAC	4	E87177
TestAmerica Knoxville	Georgia	State Program	4	906
TestAmerica Knoxville	Hawaii	State Program	9	N/A
TestAmerica Knoxville	Indiana	State Program	5	C-TN-02
TestAmerica Knoxville	Iowa	State Program	7	375
TestAmerica Knoxville	Kansas	NELAC	7	E-10349
TestAmerica Knoxville	Kentucky	State Program	4	90101
TestAmerica Knoxville	Louisiana DOHH	State Program	6	LA110001
TestAmerica Knoxville	Louisiana DEQ	NELAC	6	83979
TestAmerica Knoxville	Maryland	State Program	3	277
TestAmerica Knoxville	Michigan	State Program	5	9933
TestAmerica Knoxville	Minnesota	NELAC	5	047-999-429
TestAmerica Knoxville	Nevada	State Program	9	TN00009
TestAmerica Knoxville	New Jersey	NELAC	2	TN001
TestAmerica Knoxville	New York	NELAC	2	10781
TestAmerica Knoxville	North Carolina DENR	State Program	4	64
TestAmerica Knoxville	North Carolina DHHS	State Program	4	21705
TestAmerica Knoxville	Ohio	OVAP	5	CL0059
TestAmerica Knoxville	Oklahoma	State Program	6	9415
TestAmerica Knoxville	Pennsylvania	NELAC	3	68-00576
TestAmerica Knoxville	South Carolina	State Program	4	84001
TestAmerica Knoxville	Tennessee	State Program	4	2014
TestAmerica Knoxville	Texas	NELAC	6	T104704380-TX
TestAmerica Knoxville	Federal	USDA		P330-11-00035
TestAmerica Knoxville	Utah	NELAC	8	QUAN3
TestAmerica Knoxville	Virginia	NELAC	3	460176
TestAmerica Knoxville	Virginia	State Program	3	165
TestAmerica Knoxville	Washington	State Program	10	C593
TestAmerica Knoxville	West Virginia DEP	State Program	3	345
TestAmerica Knoxville	West Virginia DHHR	State Program	3	9955C

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Sample Data Summary

TestAmerica Irvine
 Sample ID: OUTFALL_002_20141213_COMP
 Trace Level Organic Compounds

Lot - Sample #....:	H4L160430 - 001	Work Order #....:	M5Q2D1AA	Matrix....:	WATER
Date Sampled....:	12/13/14	Date Received....:	12/16/14	Dilution Factor:	1
Prep Date....:	12/17/14	Analysis Date....:	01/12/15		
Prep Batch #:	4351027				
Initial Wgt/Vol :	1059 mL	Instrument ID....:	M2A	Method:	EPA-5 1613B
Analyst ID....:	Kathryn B. Lay				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		0.00000944	0.00000274	ug/L
Total TCDD	ND		0.00000944	0.00000274	ug/L
1,2,3,7,8-PeCDD	ND		0.0000472	0.00000117	ug/L
Total PeCDD	ND		0.0000472	0.00000117	ug/L
1,2,3,4,7,8-HxCDD	ND		0.0000472	0.000000800	ug/L
1,2,3,6,7,8-HxCDD	ND		0.0000472	0.000000860	ug/L
1,2,3,7,8,9-HxCDD	ND		0.0000472	0.000000770	ug/L
Total HxCDD	ND		0.0000472	0.000000800	ug/L
1,2,3,4,6,7,8-HpCDD	ND		0.0000472	0.00000144	ug/L
Total HpCDD	ND		0.0000472	0.00000144	ug/L
OCDD	0.0000202	B J	0.0000944	0.00000132	ug/L
2,3,7,8-TCDF	ND		0.00000944	0.00000164	ug/L
Total TCDF	ND		0.00000944	0.00000164	ug/L
1,2,3,7,8-PeCDF	ND		0.0000472	0.000000850	ug/L
2,3,4,7,8-PeCDF	ND		0.0000472	0.000000780	ug/L
Total PeCDF	ND		0.0000472	0.000000810	ug/L
1,2,3,4,7,8-HxCDF	ND		0.0000472	0.000000600	ug/L
1,2,3,6,7,8-HxCDF	ND		0.0000472	0.000000590	ug/L
2,3,4,6,7,8-HxCDF	ND		0.0000472	0.000000560	ug/L
1,2,3,7,8,9-HxCDF	ND		0.0000472	0.000000700	ug/L
Total HxCDF	ND		0.0000472	0.000000610	ug/L
1,2,3,4,6,7,8-HpCDF	ND		0.0000472	0.000000960	ug/L
1,2,3,4,7,8,9-HpCDF	ND		0.0000472	0.00000115	ug/L
Total HpCDF	ND		0.0000472	0.00000104	ug/L
OCDF	0.000000900	Q J	0.0000944	0.00000118	ug/L

TestAmerica Irvine
Sample ID: OUTFALL_002_20141213_COMP
Trace Level Organic Compounds

Lot - Sample #....: H4L160430 - 001	Work Order #....: M5Q2D1AA	Matrix....: WATER
Date Sampled....: 12/13/14	Date Received....: 12/16/14	Dilution Factor: 1
Prep Date....: 12/17/14	Analysis Date....: 01/12/15	
Prep Batch #: 4351027		
Initial Wgt/Vol : 1059 mL	Instrument ID....: M2A	Method: EPA-5 1613B
Analyst ID....: Kathryn B. Lay		

<u>INTERNAL STANDARDS</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
13C-2,3,7,8-TCDD	87	25 - 164
13C-1,2,3,7,8-PeCDD	99	25 - 181
13C-1,2,3,4,7,8-HxCDD	82	32 - 141
13C-1,2,3,6,7,8-HxCDD	93	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	85	23 - 140
13C-OCDD	95	17 - 157
13C-2,3,7,8-TCDF	82	24 - 169
13C-1,2,3,7,8-PeCDF	92	24 - 185
13C-2,3,4,7,8-PeCDF	89	21 - 178
13C-1,2,3,4,7,8-HxCDF	75	26 - 152
13C-1,2,3,6,7,8-HxCDF	77	26 - 123
13C-2,3,4,6,7,8-HxCDF	86	28 - 136
13C-1,2,3,7,8,9-HxCDF	91	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	78	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	86	26 - 138
13C-OCDF	95	17 - 157

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
37Cl4-2,3,7,8-TCDD	103	35 - 197

QUALIFIERS

- B Method blank contamination. The associated method blank contains the target analyte at a reportable level.
- J Estimated Result.
- Q Estimated maximum possible concentration (EMPC).

Method Blank Report
Trace Level Organic Compounds

Lot - Sample #....: H4L170000 - 027B **Work Order #....:** M5RCM1AA **Matrix....:** WATER
Dilution Factor: 1
Prep Date....: 12/17/14 **Analysis Date....:** 01/10/15
Prep Batch #: 4351027
Initial Wgt/Vol : 1000 mL **Instrument ID....:** M2A **Method:** EPA-5 1613B
Analyst ID....: Patricia(Trish) M. Parsly

PARAMETER	RESULT	MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND	0.0000100	0.00000589	ug/L
Total TCDD	ND	0.0000100	0.00000589	ug/L
1,2,3,7,8-PeCDD	ND	0.0000500	0.00000301	ug/L
Total PeCDD	ND	0.0000500	0.00000301	ug/L
1,2,3,4,7,8-HxCDD	ND	0.0000500	0.00000263	ug/L
1,2,3,6,7,8-HxCDD	ND	0.0000500	0.00000268	ug/L
1,2,3,7,8,9-HxCDD	ND	0.0000500	0.00000247	ug/L
Total HxCDD	ND	0.0000500	0.00000259	ug/L
1,2,3,4,6,7,8-HpCDD	ND	0.0000500	0.00000302	ug/L
Total HpCDD	ND	0.0000500	0.00000302	ug/L
OCDD	0.0000276 J	0.000100	0.00000427	ug/L
2,3,7,8-TCDF	ND	0.0000100	0.00000442	ug/L
Total TCDF	ND	0.0000100	0.00000442	ug/L
1,2,3,7,8-PeCDF	ND	0.0000500	0.00000249	ug/L
2,3,4,7,8-PeCDF	ND	0.0000500	0.00000223	ug/L
Total PeCDF	ND	0.0000500	0.00000235	ug/L
1,2,3,4,7,8-HxCDF	ND	0.0000500	0.00000157	ug/L
1,2,3,6,7,8-HxCDF	ND	0.0000500	0.00000170	ug/L
2,3,4,6,7,8-HxCDF	ND	0.0000500	0.00000148	ug/L
1,2,3,7,8,9-HxCDF	ND	0.0000500	0.00000202	ug/L
Total HxCDF	ND	0.0000500	0.00000167	ug/L
1,2,3,4,6,7,8-HpCDF	ND	0.0000500	0.00000229	ug/L
1,2,3,4,7,8,9-HpCDF	ND	0.0000500	0.00000302	ug/L
Total HpCDF	ND	0.0000500	0.00000261	ug/L
OCDF	ND	0.000100	0.00000307	ug/L

Method Blank Report
Trace Level Organic Compounds

Lot - Sample #....: H4L170000 - 027B
Dilution Factor: 1
Prep Date....: 12/17/14
Prep Batch #: 4351027
Initial Wgt/Vol : 1000 mL
Analyst ID....: Patricia(Trish) M. Parsly

Work Order #....: M5RCM1AA

Matrix....: WATER

Analysis Date....: 01/10/15

Instrument ID....: M2A

Method: EPA-5 1613B

<u>INTERNAL STANDARDS</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
13C-2,3,7,8-TCDD	92	25 - 164
13C-1,2,3,7,8-PeCDD	87	25 - 181
13C-1,2,3,4,7,8-HxCDD	92	32 - 141
13C-1,2,3,6,7,8-HxCDD	94	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	93	23 - 140
13C-OCDD	96	17 - 157
13C-2,3,7,8-TCDF	77	24 - 169
13C-1,2,3,7,8-PeCDF	80	24 - 185
13C-2,3,4,7,8-PeCDF	78	21 - 178
13C-1,2,3,4,7,8-HxCDF	72	26 - 152
13C-1,2,3,6,7,8-HxCDF	75	26 - 123
13C-2,3,4,6,7,8-HxCDF	84	28 - 136
13C-1,2,3,7,8,9-HxCDF	79	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	79	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	86	26 - 138
13C-OCDF	93	17 - 157

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
37Cl4-2,3,7,8-TCDD	104	35 - 197

QUALIFIERS

J Estimated Result.

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot # ...: H4L160430 Work Order # ...: M5RCM1AC-LCS Matrix: WATER
 LCS Lot-Sample#: H4L170000 - 027
 Prep Date: 12/17/14 Analysis Date ..: 01/07/15
 Prep Batch # ...: 4351027
 Dilution Factor : 1
 Analyst ID.....: Patricia(Trish) M. Parsl Instrument ID.: M2A Method.....: EPA-5 1613B
 Initial Wgt/Vol: 1000 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RECOVERY LIMITS
2,3,7,8-TCDD	0.0002	0.0002	ug/L	100	(67 - 158)
1,2,3,7,8-PeCDD	0.0010	0.0010	ug/L	100	(70 - 142)
1,2,3,4,7,8-HxCDD	0.0010	0.0009	ug/L	95	(70 - 164)
1,2,3,6,7,8-HxCDD	0.0010	0.0009	ug/L	95	(76 - 134)
1,2,3,7,8,9-HxCDD	0.0010	0.0009	ug/L	98	(64 - 162)
1,2,3,4,6,7,8-HpCDD	0.0010	0.0009	ug/L	93	(70 - 140)
OCDD	0.0020	0.0017	ug/L	90 B	(78 - 144)
2,3,7,8-TCDF	0.0002	0.0002	ug/L	100	(75 - 158)
1,2,3,7,8-PeCDF	0.0010	0.0009	ug/L	91	(80 - 134)
2,3,4,7,8-PeCDF	0.0010	0.0009	ug/L	95	(68 - 160)
1,2,3,4,7,8-HxCDF	0.0010	0.0009	ug/L	95	(72 - 134)
1,2,3,6,7,8-HxCDF	0.0010	0.0009	ug/L	96	(84 - 130)
2,3,4,6,7,8-HxCDF	0.0010	0.0009	ug/L	95	(70 - 156)
1,2,3,7,8,9-HxCDF	0.0010	0.0009	ug/L	94	(78 - 130)
1,2,3,4,6,7,8-HpCDF	0.0010	0.0009	ug/L	92	(82 - 122)
1,2,3,4,7,8,9-HpCDF	0.0010	0.0009	ug/L	95	(78 - 138)
OCDF	0.0020	0.0018	ug/L	93	(63 - 170)

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	91	(20 - 175)
13C-1,2,3,7,8-PeCDD	95	(21 - 227)
13C-1,2,3,4,7,8-HxCDD	93	(21 - 193)
13C-1,2,3,6,7,8-HxCDD	88	(25 - 163)
13C-1,2,3,4,6,7,8-HpCDD	90	(26 - 166)
13C-OCDD	91	(13 - 199)
13C-2,3,7,8-TCDF	83	(22 - 152)
13C-1,2,3,7,8-PeCDF	88	(21 - 192)
13C-2,3,4,7,8-PeCDF	85	(13 - 328)
13C-1,2,3,4,7,8-HxCDF	78	(19 - 202)
13C-1,2,3,6,7,8-HxCDF	79	(21 - 159)
13C-2,3,4,6,7,8-HxCDF	84	(22 - 176)
13C-1,2,3,7,8,9-HxCDF	85	(17 - 205)
13C-1,2,3,4,6,7,8-HpCDF	80	(21 - 158)
13C-1,2,3,4,7,8,9-HpCDF	83	(20 - 186)
13C-OCDF	83	(13 - 199)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	105	(31 - 191)

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Notes:

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Sample Receipt Documentation

TestAmerica Irvine
 17461 Derian Ave Suite 100
 Irvine, CA 92614-5817
 Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING



Client Information (Sub Contract Lab)		Sampler: Wilson, Debby S		Lab P/M: Wilson, Debby S		Carrier Tracking No(s): 440-70091.1		COC No: 440-70091.1	
Client Contact: Shipping/Receiving		Phone: debby.wilson@testamericainc.com		E-Mail: debby.wilson@testamericainc.com		Page: Page 1 of 1		Job #: 440-96606-1	
Company: TestAmerica Laboratories, Inc.		Address: 5815 Middlebrook Pike, Knoxville TN, 37921		Phone: 865-291-3000(Tel) 865-584-4315(Fax)		Email:		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 Other:	
Project Name: Annual and Routine Outfall 008 Composite		Project #: 44009879		SSOW#:		Due Date Requested: 12/29/2014		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SSO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4.5 Z - other (specify)	
Site:		Sample Date: 12/12/14		Sample Time: 15:17 Pacific		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=wastefill)	
Sample Identification - Client ID (Lab ID)		Outfall_008_20141212 (440-96606-1)		Field Filtered Sample (Yes or No)		Return MS/MSD (Yes or No)		Sub (1613 dioxin) 1613 dioxin	
Total Number of Containers		2		RC/ND pH=6		Special Instructions/Note:		See OAS,Boeing_w/it to zero. ug/L	
Possible Hazard Identification		Unconfirmed		Deliverable Requested: I, II, III, IV, Other (specify)		Empty Kit Relinquished by: <i>John Sandy</i>		Date/Time: 12/15/14 17:00	
Relinquished by:		Date/Time: 12/16/14 09:20		Relinquished by:		Date/Time: 12/16/14 09:20		Company	
Relinquished by:		Date/Time:		Relinquished by:		Date/Time:		Company	
Custody Seal Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s): °C and Other Remarks:		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Special Instructions/QC Requirements:		Method of Shipment:		Received by: <i>Felix</i>		Date/Time: 12/15/14 17:00		Company	
Time:		Date:		Received by: <i>Kyran Henry</i>		Date/Time: 12/16/14 09:20		Company	

TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Lot Number: 141160432

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Do sample container labels match COC? (IDs, Dates, Times)	<input checked="" type="checkbox"/>			<input type="checkbox"/> 1a Do not match COC <input type="checkbox"/> 1b Incomplete information <input type="checkbox"/> 1c Marking smeared <input type="checkbox"/> 1d Label torn <input type="checkbox"/> 1e No label <input type="checkbox"/> 1f COC not received <input type="checkbox"/> 1g Other:	
2. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : <u>5C57</u> Correction factor: <u>-0.1</u>	<input checked="" type="checkbox"/>			<input type="checkbox"/> 2a Temp Blank = _____ <input type="checkbox"/> 2b Cooler Temp = _____ <input type="checkbox"/> 2c Cooling initiated for recently collected samples, ice present.	
3. Were samples received with correct chemical preservative (excluding Encore)?	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/> 3a See box 3A for pH Preservation <input type="checkbox"/> 3b Other:	
4. Were custody seals present/intact on cooler and/or containers?	<input checked="" type="checkbox"/>			<input type="checkbox"/> 4a Not present <input type="checkbox"/> 4b Not intact <input type="checkbox"/> 4c Other:	
5. Were all of the samples listed on the COC received?	<input checked="" type="checkbox"/>			<input type="checkbox"/> 5a Samples received-not on COC <input type="checkbox"/> 5b Samples not received-on COC	
6. Were all of the sample containers received intact?	<input checked="" type="checkbox"/>			<input type="checkbox"/> 6a Leaking <input type="checkbox"/> 6b Broken	
7. Were VOA samples received without headspace?	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/> 7a Headspace (VOA only)	
8. Were samples received in appropriate containers?	<input checked="" type="checkbox"/>			<input type="checkbox"/> 8a Improper container	
9. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number: <u>4252 2017/07</u>	<input checked="" type="checkbox"/>			<input type="checkbox"/> 9a Could not be determined due to matrix interference	
10. Were samples received within holding time?	<input checked="" type="checkbox"/>			<input type="checkbox"/> 10a Holding time expired	
11. For rad samples, was sample activity info. provided?	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/> Incomplete information	
12. For 1613B water samples is pH<9?	<input checked="" type="checkbox"/>			If no, was pH adjusted to pH 7 - 9 with sulfuric acid?	pH test strip lot number: <u>HC425511</u>
13. Are the shipping containers intact?	<input checked="" type="checkbox"/>			<input type="checkbox"/> 13a Leaking <input type="checkbox"/> 13b Other:	Box 3A: pH Preservation Box 9A: Residual Chlorine
14. Was COC relinquished? (Signed/Dated/Timed)	<input checked="" type="checkbox"/>			<input type="checkbox"/> 14a Not relinquished	Preservative: Lot Number:
15. Are tests/parameters listed for each sample?	<input checked="" type="checkbox"/>			<input type="checkbox"/> 15a Incomplete information	Exp Date:
16. Is the matrix of the samples noted?	<input checked="" type="checkbox"/>			<input type="checkbox"/> 15a Incomplete information	Analyst:
17. Is the date/time of sample collection noted?	<input checked="" type="checkbox"/>			<input type="checkbox"/> 15a Incomplete information	Date:
18. Is the client and project name/# identified?	<input checked="" type="checkbox"/>			<input type="checkbox"/> 15a Incomplete information	Time:
19. Was the sampler identified on the COC?	<input checked="" type="checkbox"/>			<input type="checkbox"/> 19a Other	

Quote #: 90443 PM Instructions: NA

Sample Receiving Associate: Ryan Henry Date: 12/16/14



CHAIN OF CUSTODY FORM

Test America
October 2011

Client Name/Address:
Haley & Aldrich
9040 Filars Road Suite 220
San Diego, CA 92108-9980

Project:
Boehrs-SSEL RPDES
Annual and Routine Outfall 008
01AS
Sturmwater at Happy Valley

Project Manager: Nancy Gantner
Phone Number:
919.285.7122, 859.337.4091 (cell)
Field Manager: Jeff Simon
919.350.7340, 919.414.5006 (cell)

Sampler:
Test America Contact: Debby Wilson
919.285.7122, 859.337.4091 (cell)

Sample Description	Container Type	Sample ID	Sampling Date/Time	Preservative	Batch #
Outfall 008	W, 1L Amber		12/12/14	HCl	1A, 1B
Outfall 008	W, VOA			HCl	2A, 2B, 2C
Outfall 008	W, VOA			None	3A, 3B, 3C
Outfall 008	W, 500 ml Poly			None	6
Outfall 008	W, 125 ml Poly			None	7
Outfall 008	W, 125 ml Poly			None	8
Outfall 008	W, 125 ml Poly			None	9
Outfall 008	W, 125 ml Poly			None	10
Outfall 008	W, 125 ml Poly			None	11
Outfall 008	W, 125 ml Poly			None	12
Outfall 008	W, 125 ml Poly			None	13
Outfall 008	W, 125 ml Poly			None	14, 15
Outfall 008	W, 125 ml Poly			None	16
Outfall 008	W, 125 ml Poly			None	17
Outfall 008	W, 125 ml Poly			None	18
Outfall 008	W, 125 ml Poly			None	19
Outfall 008	W, 125 ml Poly			None	20

Chain of Custody:
Received by: TESS DUNN 12-12-14
Received by: NAL TAI 12-12-14
Received by: TAI
Date/Time: 12-12-14 12:15
Date/Time: 12-12-14 13:14
Date/Time: TAI

Analysis Required:
VOCA 024, A+M+SVC
VOCA 024, A+M+SVC + PP
CA 018 (004-HEM)

Field Readings (Include units):
pH: _____ pH Unit
Temp: _____ °C/°F
Field readings OC: _____
Checked by: _____
Date/Time: _____

Comments:
Deliver to Lab ASAP

Signature/Date:
Prepared by: TESS DUNN 055
Date/Time: 12-12-14 12:45
Reviewed by: NAL TAI
Date/Time: 12-12-14 13:14
Approved by: TAI

Temperature:
70 Day: _____
90 Day: _____
120 Day: _____
5.8/5.0 °C 12-73

Barcode:
440-86457 Chain of Custody

12/15 Due to overnight, Fecal & E. Coli were not marked on this coc. Per conversation w/ lab manager on 12/12, those requests were added. Lab manager noted that we were not sampled in sterile bottle; analysis was subsequently cancelled. KAM

CHAIN OF CUSTODY FORM



440-96479 Chain of Custody

Client Name/Address: Halley & Aldrich 9040 Friars Road Suite 220 San Diego, CA 92108-5660		Project: Boeing-SSL NPDES Annual and Routine Outfall 008 GRAB Stormwater at Happy Valley		Meter Serial # UH4VAADPK					
Test America Contact: Debby Wilson Project Manager: Nancy Gardiner		Phone Number: 619.285.7132, 858.337.4061 (cell) Field Manager: Jeff Bannon 818.350.7940, 818.414.5608 (cell)		Field readings: (include units) PH 6.61 pH unit Temp 11.73 °F					
Sampler: B. Bannan D. Egan		Sample ID		Time of readings: 0855					
Sample Description	Container Type	# of Cans	Sample Matrix	Sampling Date/Time	Preservative	Bottle #	Analysis Required	Comments	
Outfall 008	W 1L Amber	2		12-12-14 0855	HCl	1A, 1B			
Outfall 008	W VOAs	3			HCl	2A, 2B, 2C			
Outfall 008	W VOAs	3			None	3A, 3B, 3C			
Outfall 008	W 500 mL Poly	1			None	6			
Outfall 008	W 125 mL Poly	1			Na2S2O3	7			
Outfall 008	W 125 mL Poly	1			Na2S2O3	8			
Outfall 008	W 1 Gal Cube	1			None	9			
Outfall 008	W 325ml Poly	1			None	13			
Trips Blanks	W VOAs	3		12-12-14 0855	HCl	4A, 4B, 4C			
Trips Blanks	W VOAs	3			None	5A, 5B, 5C			
These Samples are the Grab Portion of Outfall 008 for this storm event. Composite samples will follow and are to be added to this work order.							Legend: R = Routine, A = Annual		
Requisitioned By DEBBY WILSON	Date/Time 12/12/14 14:40	Received By Shafiq NABT	Date/Time 12/12/14 16:39	Turn-around time (check) No. of hours: _____ 48 Hour _____ 72 Hour _____ 10 Day _____	Normal _____				
Requisitioned By Shafiq NABT	Date/Time 12/12/14 16:39	Received By Shafiq NABT	Date/Time 12/12/14 16:39	Sample Integrity (Check) Intact _____ On Ice _____	NPDES Level IV _____				

73
44-36
13/0.5

Chain of Custody Record

Client Information (Sub Contract Lab) Client Contact: Wilson, Deby S Shipping/Receiving: debby.wilson@testamericainc.com Company: Aquatic Testing Laboratories		Sampler: Lab PM: Wilson, Deby S Phone: E-Mail: debby.wilson@testamericainc.com		Carrier Tracking No(s): 440-70274 1 Page: Page 1 of 1 Job #: 440-96457-1	
Address: 4350 Transport #107, City: Ventura State, Zip: CA, 93003 Phone: Email:		Due Date Requested: 12/29/2014 TAT Requested (days): PO #: WO #: Project #: 44009879 SSO#:		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 Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCA W - ph 4-5 X - other (specify)	
Project Name: Boeing SSFL NPDES Annual and Routine 008 Site:		SUB (Acute FH minnow, EPA/821-R02-012) minnow, EPA/821-R02-012		Total Number of Containers:	
Sample Identification - Client ID (Lab ID) Outfall008_20141212_Grab (440-96479-1)		Sample Date: 12/12/14 Sample Time: 08:55 Pacific Matrix (W=water, S=solid, O=organics, A=air) Sample Type (C=comp, G=grab) Preservation Code: Water		Special Instructions/Note: Field Filtered Sample (Yes or No)	
Possible Hazard Identification Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		Special Instructions/QC Requirements:	
Empty Kit Relinquished by:		Date:		Method of Shipment:	
Relinquished by:		Date/Time:		Company:	
Relinquished by:		Date/Time:		Company:	
Relinquished by:		Date/Time:		Company:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:	



Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 440-96457-1

Login Number: 96457

List Number: 1

Creator: Blocker, Kristina M

List Source: TestAmerica Irvine

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.	False	Refer to Job Narrative for details.
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.	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: 440-96457-1

Login Number: 96479

List Source: TestAmerica Irvine

List Number: 1

Creator: Blocker, Kristina M

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.	False	Refer to Job Narrative for details.
Samples are received within Holding Time.	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	False	Insufficient volume received for requested analysis.
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
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: 440-96457-1

Login Number: 96606

List Number: 1

Creator: Kim, Guerry

List Source: TestAmerica Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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.	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 $<6\text{mm}$ (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: 440-96457-1

Login Number: 96606

List Number: 2

Creator: Clarke, Jill C

List Source: TestAmerica St. Louis

List Creation: 12/16/14 01:38 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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.	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	4.4, 4.6, 5.4
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	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (40-110)		
160-9831-E-8-B DU	Duplicate	109		
440-96606-1	Outfall008_20141212_Comp	80.5		
440-96606-2	Trip_Blank_20141212	109		
LCS 160-164103/2-A	Lab Control Sample	96.5		
MB 160-164103/1-A	Method Blank	96.2		

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)		
440-96606-1	Outfall008_20141212_Comp	96.5	89.7		
440-96606-2	Trip_Blank_20141212	102	91.6		
LCS 160-168188/2-A	Lab Control Sample	105	85.6		
LCS D 160-168188/3-A	Lab Control Sample Dup	104	87.9		
MB 160-168188/1-A	Method Blank	102	89.0		

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Sr (C) (40-110)	Y (40-110)		
440-96594-A-2-G DU	Duplicate	88.2	90.8		
440-96606-1	Outfall008_20141212_Comp	70.4	91.6		
440-96606-2	Trip_Blank_20141212	86.3	89.7		
LCS 160-165620/2-A	Lab Control Sample	88.6	92.7		
MB 160-165620/1-A	Method Blank	90.0	89.3		

Tracer/Carrier Legend

Sr (C) = Sr Carrier

Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	U-232 (30-110)		
440-97211-A-2-D DU	Duplicate	31.1		
LCS 160-165361/2-A	Lab Control Sample	83.7		
MB 160-165361/1-A	Method Blank	87.1		

TestAmerica Irvine

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.

Project/Site: Boeing SSFL NPDES Annual and Routine 008

TestAmerica Job ID: 440-96457-1

Tracer/Carrier Legend

U-232 = Uranium-232

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DATA VALIDATION REPORT

Haley & Aldrich Boeing SSFL Stormwater

SAMPLE DELIVERY GROUP: 440-94732-1

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title: Haley & Aldrich Boeing SSFL Stormwater
 Contract Task Order: 1272.003H.01 001
 Sample Delivery Group: 440-94732-1
 Project Manager: K. Miller
 Matrix: Water
 QC Level: IV
 No. of Samples: 1
 No. of Reanalyses/Dilutions: 0
 Laboratory: TestAmerica Irvine

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix</i>	<i>Collection</i>	<i>Method</i>
Outfall009_20141203 _Comp	440-94934-1	H4L110416- 001	Water	12/3/2014 10:44:00 AM	E1613B, E200.8, E900, E901.1, E903.0, E904.0, E905.0, E906.0, HASL-300 U MOD, RADUIM, SM2540D

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at TestAmerica-Irvine on ice and within the temperature limits of 4°C ±2°C. The coolers for the 1613B analysis were received below the temperature limits at TestAmerica-Knoxville; however, as the sample containers were not noted to be frozen or damaged, no qualification was necessary. According to the case narrative for this SDG, the sample containers were received intact and properly preserved, as applicable. No COC transferring the samples to TestAmerica-St. Louis was provided. The COCs were appropriately signed and dated by field and laboratory personnel. Custody seals were intact upon receipt at Test-America-Knoxville. The samples were delivered to TestAmerica Irvine by courier.

A corrected COC provided in the data package requested the sample ID be changed to Outfall009_20141202_Comp. The sample was reported as Outfall009_20141203_Comp in the data package and the electronic data deliverable.

Upon receipt at TestAmerica-Irvine, the laboratory prepared the radionuclide samples and a blank that accompanied the samples to TestAmerica-St. Louis.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
L1	LCS/LCSD RPD was outside control limits.	LSC/LSCD RPD was outside control limits.
Q	MS/MSD recovery was poor.	MS recovery was poor.
Q1	MS/MSD RPD was outside control limits.	MS/MSD RPD was outside control limits.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	ICPMS tune was not compliant.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

Qualifier	Organics	Inorganics
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The reported result is above the method detection limit but is less than the reporting limit.	The reported result is above the method detection limit but is less than the reporting limit.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The reported result is above the method detection limit but is less than the reporting limit.	The reported result is above the method detection limit but is less than the reporting limit.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

III. Method Analyses

A. EPA METHOD 1613B—Dioxin/Furans

Reviewed By: L. Calvin

Date Reviewed: January 13, 2015

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^x Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0)*, *USEPA Method 1613B*, and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review (2011)*.

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted and analyzed within one year of collection.
- Instrument Performance: Instrument performance criteria were met. Following are findings associated with instrument performance.
 - 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 reported as less than 25%.
 - Mass Spectrometer Performance: The mass spectrometer performance was acceptable with the static resolving power greater than 10,000.
- Calibration: Calibration criteria were met.
 - Initial Calibration: Initial calibration criteria were met. The initial calibration was acceptable with %RSDs $\leq 20\%$ for the 15 native compounds (calibration by isotope dilution) and $\leq 35\%$ for the two native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613B control limits for all standards.
 - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of the analytical sequence. The VER was acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613B. The ion abundance ratios and relative retention times were within the method control limits.
- Blanks: The method blank had detects below the reporting limit for OCDD and OCDF at 0.00000656 $\mu\text{g/L}$ and 0.00000630 $\mu\text{g/L}$, respectively. The sample concentration of OCDD exceeded 10 \times the method blank concentration and required no qualification. The sample result for OCDF was qualified as nondetected, "U," at the level of contamination. The method blank had no other detects above the estimated detection limit (EDL).

- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613B.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: This SDG had no identified field duplicate samples.
- Internal Standards Performance: The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613B.
- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613B. Isomer 2,3,7,8-TCDF was not detected in the initial analysis of the sample; therefore, confirmation analysis was not necessary.
- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike concentrations. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J." Any detects between the EDL and the reporting limit (RL) were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Nondetects are valid to the EDL.

The result for 1,2,3,4,6,7,8-HpCDF reported as an EMPC was qualified as an estimated nondetect, "UJ," at the level of the EMPC. Totals HpCDF and HxCDF containing one or more EMPC peaks were qualified as estimated, "J."

B. EPA METHOD 200.8—Metals

Reviewed By: P. Meeks

Date Reviewed: January 13, 2015

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^x Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0)*, *EPA Method 200.8*, and the *National Functional Guidelines for Inorganic Data Review (2014)*.

- Holding Times: The analytical holding time, six months, was met.

- Tuning: Mass calibrations were within 0.1 atomic mass units of the true value and the %RSDs were $\leq 5\%$.
- Calibration: The initial and continuing calibration recoveries were within 90-110% and the CRI recoveries were within the control limits of 70-130%.
- Blanks: Method blanks and CCBs had no detects.
- Interference Check Samples: Recoveries were within 80-120%. If detected in the ICSA, the interferences were less than the certified trace contaminant concentration.
- Blank Spikes and Laboratory Control Samples: Recoveries and the dissolved RPDs were within the method control limits of 85-115% and $\leq 20\%$, respectively.
- Laboratory Duplicates: No laboratory duplicate analyses were performed.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample in this SDG. Method accuracy was evaluated based on the LCS results.
- Serial Dilution: No serial dilution analyses were performed.
- Internal Standards: Sample internal standard recoveries were within 60-125% of the calibration blank.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

C. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks

Date Reviewed: January 13, 2015

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *EPA Methods 900.0, 901.1, 903.1, 904.0, 905.0, and 906.0, HASL-300*, and the *National Functional Guidelines for Inorganic Data Review (2014)*.

- **Holding Times:** The tritium sample was analyzed within 180 days of collection. Aliquots for the remaining analytes were preserved within the five-day holding time.
- **Calibration:** The laboratory calibration information included the standard certificates and applicable preparation/dilutions logs for NIST-traceability.

The gross alpha and radium-226 detector efficiencies were less than 20%; therefore, gross alpha and radium-226 in the sample was qualified as estimated, “J,” for detects and, “UJ,” for nondetects. The remaining detector efficiencies were greater than 20%.

All initial and annual calibration verifications were acceptable with mean recoveries within 90-110%. All carrier recoveries were within 40-110%. The gamma spectroscopy analytes were determined at the maximum photopeak energy.

- **Blanks:** There were no analytes detected in the method blanks or the blank prepared by TestAmerica-Irvine.
- **Blank Spikes and Laboratory Control Samples:** The recoveries and the tritium relative error ration (RER) were within laboratory-established control limits.
- **Laboratory Duplicates:** A laboratory duplicate analysis was performed on the sample in this SDG for cesium-137 and potassium-40. The duplicate RERs were within the laboratory control limit of ≤ 1 .
- **Matrix Spike/Matrix Spike Duplicate:** Matrix spike analyses were performed on the sample in this SDG for cesium-137 and potassium-40. The recoveries were within the laboratory control limits. Accuracy for the remaining methods was evaluated based on the LCS results.
- **Sample Result Verification:** An EPA Level IV review was performed for the sample in this data package. The sample results and MDCs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Any detects between the MDC and the reporting limit (RL) were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Reported nondetects are valid to the MDC.

- **Field QC Samples:** Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - **Field Blanks and Equipment Rinsates:** This SDG had no identified field blank or equipment rinsate samples.
 - **Field Duplicates:** There were no field duplicate samples identified for this SDG.

D. Standard Method 2540D—Total Suspended Solids (TSS)

Reviewed By: P. Meeks

Date Reviewed: January 13, 2015

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^x Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0)*, *Standard Method for the Examination of Water and Wastewater Method 2540D*, and the *National Functional Guidelines for Inorganic Data Review (2014)*.

- **Holding Times:** The analytical holding time, seven days, was met.
- **Calibration:** The balance calibration logs were acceptable.
- **Blanks:** The method blank no detects for TSS.
- **Blank Spikes and Laboratory Control Samples:** The recovery was within the control limits of 85-115%.
- **Laboratory Duplicates:** A laboratory duplicate analysis was performed on the sample in this SDG. The RPD was within the control limit of ≤10%.
- **Matrix Spike/Matrix Spike Duplicate:** MS/MSD analyses are not applicable to the TSS analysis.
- **Sample Result Verification:** Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either “J+” or “J-,” otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms: 440947321

Analysis Method *E1613B*

Sample Name Outfall009_20141203_Co **Matrix Type:** WG **Result Type:** TRG

Sample Date: 12/3/2014 10:44:00 AM **Validation Level:** 3

Lab Sample Name: 440-94934-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	N	39001-02-0	0.0000135	0.0000954	0.0	ug/L	BJ	U	B
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	N	3268-87-9	0.000133	0.0000954	0.0	ug/L	B		
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	N	67562-39-4	0.00000513	0.0000477	0.0	ug/L	QJ	UJ	*III
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	N	35822-46-9	0.0000174	0.0000477	0.0	ug/L	J	J	DNQ
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	N	55673-89-7		0.0000477	0.0	ug/L	U	U	
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	N	70648-26-9		0.0000477	0.0	ug/L	U	U	
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	N	39227-28-6		0.0000477	0.0	ug/L	U	U	
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	N	57117-44-9		0.0000477	0.0	ug/L	U	U	
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	N	57653-85-7		0.0000477	0.0	ug/L	U	U	
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	N	72918-21-9		0.0000477	0.0	ug/L	U	U	
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	N	19408-74-3		0.0000477	0.0	ug/L	U	U	
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	N	57117-41-6		0.0000477	0.0	ug/L	U	U	
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	N	40321-76-4		0.0000477	0.0	ug/L	U	U	
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	N	60851-34-5		0.0000477	0.0	ug/L	U	U	
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	N	57117-31-4		0.0000477	0.0	ug/L	U	U	
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	N	51207-31-9		0.0000095	0.0	ug/L	U	U	
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	N	1746-01-6		0.0000095	0.0	ug/L	U	U	
Total Heptachlorodibenzofuran (HpCDF)	N	38998-75-3	0.00000838	0.0000477	0.0	ug/L	QJ	J	DNQ, *III
Total Heptachlorodibenzo-p-dioxin (HpCDD)	N	37871-00-4	0.0000391	0.0000477	0.0	ug/L	J	J	DNQ
Total Hexachlorodibenzofuran (HxCDF)	N	55684-94-1	0.00000185	0.0000477	0.0	ug/L	QJ	J	DNQ, *III
Total Hexachlorodibenzo-p-dioxin (HxCDD)	N	34465-46-8		0.0000477	0.0	ug/L	U	U	

Analysis Method E1613B

Total Pentachlorodibenzofuran (PeCDF)	N	30402-15-4	0.0000477	0.0	ug/L	U	U
Total Pentachlorodibenzo-p-dioxin (PeCDD)	N	36088-22-9	0.0000477	0.0	ug/L	U	U
Total Tetrachlorodibenzofuran (TCDF)	N	55722-27-5	0.0000095	0.0	ug/L	U	U
Total Tetrachlorodibenzo-p-dioxin (TCDD)	N	41903-57-5	0.0000095	0.0	ug/L	U	U

Analysis Method E200.8

Sample Name Outfall009_20141203_Co **Matrix Type:** WG **Result Type:** TRG

Sample Date: 12/3/2014 10:44:00 AM **Validation Level:** 3

Lab Sample Name: 440-94934-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	N	7440-36-0	0.59	2.0	0.50	ug/L	J,DX	J	DNQ
Antimony	D	7440-36-0	0.53	2.0	0.50	ug/L	J,DXQP	J	DNQ
Cadmium	N	7440-43-9		1.0	0.25	ug/L	U	U	
Cadmium	D	7440-43-9		1.0	0.25	ug/L	UQP	U	
Copper	N	7440-50-8	8.2	2.0	0.50	ug/L			
Copper	D	7440-50-8	5.9	2.0	0.50	ug/L	QP		
Lead	D	7439-92-1	0.85	1.0	0.50	ug/L	J,DXQP	J	DNQ
Lead	N	7439-92-1	3.5	1.0	0.50	ug/L			
Thallium	D	7440-28-0		1.0	0.50	ug/L	UQP	U	
Thallium	N	7440-28-0		1.0	0.50	ug/L	U	U	

Analysis Method E900

Sample Name Outfall009_20141203_Co **Matrix Type:** WG **Result Type:** TRG

Sample Date: 12/3/2014 10:44:00 AM **Validation Level:** 3

Lab Sample Name: 440-94934-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Alpha Analytes	N	GROSSALPHA2.73		3.00	1.86	pCi/L		J	C
Gross Beta Analytes	N	GROSSBETA	3.15	4.00	0.883	pCi/L		J	DNQ

Analysis Method E901.1

Sample Name Outfall009_20141203_Co **Matrix Type:** WG **Result Type:** TRG

Sample Date: 12/3/2014 10:44:00 AM **Validation Level:** 3

Lab Sample Name: 440-94934-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cesium-137	N	10045-97-3	0.0266	20.0	12.5	pCi/L	U	U	
Potassium-40	N	13966-00-2	-92.7		224	pCi/L	U	U	

Analysis Method E903.0**Sample Name** Outfall009_20141203_Co **Matrix Type:** WG **Result Type:** TRG**Sample Date:** 12/3/2014 10:44:00 AM **Validation Level:** 3**Lab Sample Name:** 440-94934-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	N	13982-63-3	0.0808	1.00	0.263	pCi/L	U	UJ	C

Analysis Method E904.0**Sample Name** Outfall009_20141203_Co **Matrix Type:** WG **Result Type:** TRG**Sample Date:** 12/3/2014 10:44:00 AM **Validation Level:** 3**Lab Sample Name:** 440-94934-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-228	N	15262-20-1	0.0752	1.00	0.509	pCi/L	U	U	

Analysis Method E905.0**Sample Name** Outfall009_20141203_Co **Matrix Type:** WG **Result Type:** TRG**Sample Date:** 12/3/2014 10:44:00 AM **Validation Level:** 3**Lab Sample Name:** 440-94934-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	N	10098-97-2	0.251	3.00	0.443	pCi/L	U	U	

Analysis Method E906.0**Sample Name** Outfall009_20141203_Co **Matrix Type:** WG **Result Type:** TRG**Sample Date:** 12/3/2014 10:44:00 AM **Validation Level:** 3**Lab Sample Name:** 440-94934-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	N	10028-17-8	91.9	500	329	pCi/L	U	U	

Analysis Method HASL-300 U Mod**Sample Name** Outfall009_20141203_Co **Matrix Type:** WG **Result Type:** TRG**Sample Date:** 12/3/2014 10:44:00 AM **Validation Level:** 3**Lab Sample Name:** 440-94934-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Uranium	N	7440-61-1	0.347	1.00	1.01	pCi/L	UG	U	

Analysis Method *SM2540D*

Sample Name Outfall009_20141203_Co **Matrix Type:** WG **Result Type:** TRG

Sample Date: 12/3/2014 10:44:00 AM **Validation Level:** 3

Lab Sample Name: 440-94934-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids (TSS)	N	TSS	21	2.5	1.3	mg/L			

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-94732-1

Client Project/Site: Routine outfall 009

For:

Haley & Aldrich, Inc.

5333 Mission Center Road

Suite 300

San Diego, California 92108

Attn: Nancy Gardiner



Authorized for release by:

1/7/2015 5:43:24 PM

Debby Wilson, Manager of Project Management

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debby.wilson@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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I certify under penalty of perjury that the information contained in this report and all attachments was produced in accordance with the indicated methods and laboratory standard operating procedures, except as noted, and are complete and accurate to the best of my knowledge and belief. Subcontract laboratory reports that are attached have been evaluated for completeness and quality control acceptability.



Debby Wilson
Manager of Project Management
1/7/2015 5:43:24 PM



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Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-94732-1	Outfall009_20141202_Grab	Water	12/02/14 13:35	12/02/14 18:14
440-94934-1	Outfall009_20141203_Comp	Water	12/03/14 10:44	12/03/14 15:59
440-94934-2	Trip Blank	Water	12/03/14 21:00	12/03/14 21:00

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Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Job ID: 440-94732-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-94732-1

Comments

No additional comments.

Receipt

The samples were received on 12/2/2014 6:14 PM and 12/3/2014 9:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 2.4° C, 2.8° C, 3.2° C and 3.4° C.

HPLC/IC

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

RAD

Method(s) ExtChrom: Uranium (162442): The samples are a dark orange color. A reduced aliquot of 100 mL was used to prevent matrix interference: (440-94934-1), Outfall009_20141203_Comp (440-94934-1)

Method(s) A-01-R: Uranium Batch: 162442: The detection goal was not met for the following sample due to a reduced aliquot which can be attributed to the presence of matrix interferences (sample is dark orange color) noted during the initial preparation (NCM ID: 46037): (440-94934-1), Outfall009_20141203_Comp (440-94934-1). Analytical results are reported with the detection limit achieved.

Method(s) PrecSep-7: Sr90: The associated samples in Batch 162945 were prepped at a reduced aliquot due the amount of sediment present, and the yellow color exhibited, which can cause matrix interference: (440-94934-1), Outfall009_20141203_Comp (440-94934-1)

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

Metals

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

General Chemistry

Method(s) SM 4500 CN E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 224827 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recovery were within acceptance limits.

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

Subcontract non-Sister

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

Organic Prep

Method(s) 1664A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 224727. The laboratory control sample (LCS) was performed in duplicate 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.

Subcontract Work

Method Chronic Cerio, EPA/821-R02-013: This method was subcontracted to Aquatic Testing Laboratories. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method 1613 dioxin: This method was subcontracted to TestAmerica Knoxville. The subcontract laboratory certification is different from that of the facility issuing the final report.

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Client Sample ID: Outfall009_20141202_Grab

Lab Sample ID: 440-94732-1

Date Collected: 12/02/14 13:35

Matrix: Water

Date Received: 12/02/14 18:14

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		4.8	1.3	mg/L		12/15/14 12:35	12/15/14 12:53	1

Client Sample ID: Outfall009_20141203_Comp

Lab Sample ID: 440-94934-1

Date Collected: 12/03/14 10:44

Matrix: Water

Date Received: 12/03/14 15:59

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	18		0.50	0.25	mg/L			12/04/14 18:53	1
Sulfate	8.8		0.50	0.25	mg/L			12/04/14 18:53	1

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	0.95	ug/L			12/19/14 15:13	1

Method: NO3NO2 Calc - Nitrogen, Nitrate-Nitrite

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	1.1		0.15	0.070	mg/L			12/15/14 16:16	1

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

Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000095	0.00000450	ug/L		12/12/14 13:00	12/17/14 04:04	1
Total TCDD	ND		0.0000095	0.00000450	ug/L		12/12/14 13:00	12/17/14 04:04	1
1,2,3,7,8-PeCDD	ND		0.0000477	0.00000213	ug/L		12/12/14 13:00	12/17/14 04:04	1
Total PeCDD	ND		0.0000477	0.00000213	ug/L		12/12/14 13:00	12/17/14 04:04	1
1,2,3,4,7,8-HxCDD	ND		0.0000477	0.00000188	ug/L		12/12/14 13:00	12/17/14 04:04	1
1,2,3,6,7,8-HxCDD	ND		0.0000477	0.00000209	ug/L		12/12/14 13:00	12/17/14 04:04	1
1,2,3,7,8,9-HxCDD	ND		0.0000477	0.00000184	ug/L		12/12/14 13:00	12/17/14 04:04	1
Total HxCDD	ND		0.0000477	0.00000193	ug/L		12/12/14 13:00	12/17/14 04:04	1
1,2,3,4,6,7,8-HpCDD	0.0000174	J	0.0000477	0.00000306	ug/L		12/12/14 13:00	12/17/14 04:04	1
Total HpCDD	0.0000391	J	0.0000477	0.00000306	ug/L		12/12/14 13:00	12/17/14 04:04	1
OCDD	0.000133	B	0.0000954	0.00000359	ug/L		12/12/14 13:00	12/17/14 04:04	1
2,3,7,8-TCDF	ND		0.0000095	0.00000312	ug/L		12/12/14 13:00	12/17/14 04:04	1
Total TCDF	ND		0.0000095	0.00000312	ug/L		12/12/14 13:00	12/17/14 04:04	1
1,2,3,7,8-PeCDF	ND		0.0000477	0.00000150	ug/L		12/12/14 13:00	12/17/14 04:04	1
2,3,4,7,8-PeCDF	ND		0.0000477	0.00000138	ug/L		12/12/14 13:00	12/17/14 04:04	1
Total PeCDF	ND		0.0000477	0.00000144	ug/L		12/12/14 13:00	12/17/14 04:04	1
1,2,3,4,7,8-HxCDF	ND		0.0000477	0.00000114	ug/L		12/12/14 13:00	12/17/14 04:04	1
1,2,3,6,7,8-HxCDF	ND		0.0000477	0.00000110	ug/L		12/12/14 13:00	12/17/14 04:04	1
2,3,4,6,7,8-HxCDF	ND		0.0000477	0.00000112	ug/L		12/12/14 13:00	12/17/14 04:04	1
1,2,3,7,8,9-HxCDF	ND		0.0000477	0.00000151	ug/L		12/12/14 13:00	12/17/14 04:04	1
Total HxCDF	0.00000185	Q J	0.0000477	0.00000120	ug/L		12/12/14 13:00	12/17/14 04:04	1
1,2,3,4,6,7,8-HpCDF	0.00000513	Q J	0.0000477	0.00000218	ug/L		12/12/14 13:00	12/17/14 04:04	1
1,2,3,4,7,8,9-HpCDF	ND		0.0000477	0.00000311	ug/L		12/12/14 13:00	12/17/14 04:04	1
Total HpCDF	0.00000838	Q J	0.0000477	0.00000257	ug/L		12/12/14 13:00	12/17/14 04:04	1
OCDF	0.0000135	B J	0.0000954	0.00000431	ug/L		12/12/14 13:00	12/17/14 04:04	1

TestAmerica Irvine

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Client Sample ID: Outfall009_20141203_Comp

Lab Sample ID: 440-94934-1

Date Collected: 12/03/14 10:44

Matrix: Water

Date Received: 12/03/14 15:59

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	106		35 - 197	12/12/14 13:00	12/17/14 04:04	1
Internal Standard	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	91		25 - 164	12/12/14 13:00	12/17/14 04:04	1
13C-1,2,3,7,8-PeCDD	94		25 - 181	12/12/14 13:00	12/17/14 04:04	1
13C-1,2,3,4,7,8-HxCDD	80		32 - 141	12/12/14 13:00	12/17/14 04:04	1
13C-1,2,3,6,7,8-HxCDD	77		28 - 130	12/12/14 13:00	12/17/14 04:04	1
13C-1,2,3,4,6,7,8-HpCDD	64		23 - 140	12/12/14 13:00	12/17/14 04:04	1
13C-OCDD	57		17 - 157	12/12/14 13:00	12/17/14 04:04	1
13C-2,3,7,8-TCDF	86		24 - 169	12/12/14 13:00	12/17/14 04:04	1
13C-1,2,3,7,8-PeCDF	86		24 - 185	12/12/14 13:00	12/17/14 04:04	1
13C-2,3,4,7,8-PeCDF	85		21 - 178	12/12/14 13:00	12/17/14 04:04	1
13C-1,2,3,4,7,8-HxCDF	73		26 - 152	12/12/14 13:00	12/17/14 04:04	1
13C-1,2,3,6,7,8-HxCDF	73		26 - 123	12/12/14 13:00	12/17/14 04:04	1
13C-2,3,4,6,7,8-HxCDF	78		28 - 136	12/12/14 13:00	12/17/14 04:04	1
13C-1,2,3,7,8,9-HxCDF	73		29 - 147	12/12/14 13:00	12/17/14 04:04	1
13C-1,2,3,4,6,7,8-HpCDF	65		28 - 143	12/12/14 13:00	12/17/14 04:04	1
13C-1,2,3,4,7,8,9-HpCDF	60		26 - 138	12/12/14 13:00	12/17/14 04:04	1
13C-OCDF	50		17 - 157	12/12/14 13:00	12/17/14 04:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.25	ug/L		12/10/14 14:45	12/10/14 22:45	1
Copper	8.2		2.0	0.50	ug/L		12/10/14 14:45	12/10/14 22:45	1
Lead	3.5		1.0	0.50	ug/L		12/10/14 14:45	12/10/14 22:45	1
Antimony	0.59	J,DX	2.0	0.50	ug/L		12/10/14 14:45	12/10/14 22:45	1
Thallium	ND		1.0	0.50	ug/L		12/10/14 14:45	12/10/14 22:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	QP	1.0	0.25	ug/L		12/10/14 21:52	12/11/14 14:06	1
Copper	5.9	QP	2.0	0.50	ug/L		12/10/14 21:52	12/11/14 14:06	1
Lead	0.85	J,DX QP	1.0	0.50	ug/L		12/10/14 21:52	12/11/14 14:06	1
Antimony	0.53	J,DX QP	2.0	0.50	ug/L		12/10/14 21:52	12/11/14 14:06	1
Thallium	ND	QP	1.0	0.50	ug/L		12/10/14 21:52	12/11/14 14:06	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.11	J,DX	0.20	0.10	ug/L		12/09/14 10:12	12/09/14 19:46	1

Method: 245.1 - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		12/09/14 10:15	12/09/14 19:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	160		10	5.0	mg/L			12/10/14 11:34	1
Total Suspended Solids	21		2.5	1.3	mg/L			12/10/14 16:33	1
Cyanide, Total	ND		5.0	2.5	ug/L		12/15/14 15:08	12/15/14 17:50	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Client Sample ID: Outfall009_20141203_Comp

Lab Sample ID: 440-94934-1

Date Collected: 12/03/14 10:44

Matrix: Water

Date Received: 12/03/14 15:59

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	2.73		1.38	1.41	1.86	pCi/L	12/19/14 16:19	12/24/14 09:12	1
Gross Beta	3.15		0.772	0.834	0.883	pCi/L	12/19/14 16:19	12/24/14 09:12	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	0.0266	U	6.77	6.77	12.5	pCi/L	12/08/14 11:24	12/09/14 17:52	1
Potassium-40	-92.7	U	551	551	224	pCi/L	12/08/14 11:24	12/09/14 17:52	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0808	U	0.150	0.151	0.263	pCi/L	12/05/14 13:43	12/29/14 17:53	1
<i>Carrier</i>	<i>%Yield</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Ba Carrier	84.7		40 - 110				12/05/14 13:43	12/29/14 17:53	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0752	U	0.293	0.293	0.509	pCi/L	12/05/14 13:55	12/29/14 12:45	1
<i>Carrier</i>	<i>%Yield</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Ba Carrier	84.7		40 - 110				12/05/14 13:55	12/29/14 12:45	1
Y Carrier	88.2		40 - 110				12/05/14 13:55	12/29/14 12:45	1

Method: 905 - Strontium-90 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.251	U	0.270	0.271	0.443	pCi/L	12/12/14 16:41	12/24/14 15:59	1
<i>Carrier</i>	<i>%Yield</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Sr Carrier	82.1		40 - 110				12/12/14 16:41	12/24/14 15:59	1
Y Carrier	96.8		40 - 110				12/12/14 16:41	12/24/14 15:59	1

Method: 906.0 - Tritium, Total (LSC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	91.9	U	192	192	329	pCi/L	12/24/14 05:48	12/24/14 15:53	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.347	U G	0.657	0.658	1.01	pCi/L	12/10/14 10:33	12/12/14 14:04	1

TestAmerica Irvine

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Client Sample ID: Outfall009_20141203_Comp

Lab Sample ID: 440-94934-1

Date Collected: 12/03/14 10:44

Matrix: Water

Date Received: 12/03/14 15:59

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.156		0.329	0.330	0.509	pCi/L		12/05/14 16:07	1

Client Sample ID: Trip Blank

Lab Sample ID: 440-94934-2

Date Collected: 12/03/14 21:00

Matrix: Water

Date Received: 12/03/14 21:00

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.523	U	0.732	0.735	1.24	pCi/L	12/19/14 16:19	12/24/14 09:19	1
Gross Beta	0.710	U	0.563	0.567	0.879	pCi/L	12/19/14 16:19	12/24/14 09:19	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-0.468	U	5.31	5.31	9.84	pCi/L	12/08/14 11:24	12/09/14 20:14	1
Potassium-40	-27.8	U	144	144	169	pCi/L	12/08/14 11:24	12/09/14 20:14	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0573	U	0.107	0.107	0.189	pCi/L	12/05/14 13:43	12/29/14 17:54	1
Carrier	%Yield	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110				12/05/14 13:43	12/29/14 17:54	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0593	U	0.221	0.221	0.384	pCi/L	12/05/14 13:55	12/29/14 12:45	1
Carrier	%Yield	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110				12/05/14 13:55	12/29/14 12:45	1
Y Carrier	85.6		40 - 110				12/05/14 13:55	12/29/14 12:45	1

Method: 905 - Strontium-90 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.00754	U	0.124	0.124	0.218	pCi/L	12/12/14 16:41	12/24/14 15:59	1
Carrier	%Yield	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Sr Carrier	82.8		40 - 110				12/12/14 16:41	12/24/14 15:59	1
Y Carrier	98.3		40 - 110				12/12/14 16:41	12/24/14 15:59	1

TestAmerica Irvine

Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Client Sample ID: Trip Blank

Lab Sample ID: 440-94934-2

Date Collected: 12/03/14 21:00

Matrix: Water

Date Received: 12/03/14 21:00

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	-0.00808	U	0.09914	0.09935	0.203	pCi/L	12/10/14 10:33	12/12/14 14:04	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.117		0.246	0.246	0.384	pCi/L		12/05/14 16:07	1



Method Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL IRV
314.0	Perchlorate (IC)	EPA	TAL IRV
NO3NO2 Calc	Nitrogen, Nitrate-Nitrite	EPA	TAL IRV
1613B	Dioxins/Furans, HRGC/HRMS (1613B)	EPA-5	TAL KNX
200.8	Metals (ICP/MS)	EPA	TAL IRV
245.1	Mercury (CVAA)	EPA	TAL IRV
1664A	HEM and SGT-HEM	1664A	TAL IRV
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL IRV
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL IRV
SM 4500 CN E	Cyanide, Total (Low Level)	SM	TAL IRV
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	TAL SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	TAL SL
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
905	Strontium-90 (GFPC)	EPA	TAL SL
906.0	Tritium, Total (LSC)	EPA	TAL SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
Chronic Cerio, EPA/821-R02-013	Bioassay	NONE	SC0127

Protocol References:

- 1664A = EPA-821-98-002
- DOE = U.S. Department of Energy
- EPA = US Environmental Protection Agency
- EPA-5 = EPA-5
- MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
- NONE = NONE
- SM = "Standard Methods For The Examination Of Water And Wastewater",
- TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

- SC0127 = Aquatic Testing Laboratories, 4350 Transport #107, Ventura, CA 93003
- TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022
- TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000
- TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Client Sample ID: Outfall009_20141202_Grab

Lab Sample ID: 440-94732-1

Date Collected: 12/02/14 13:35

Matrix: Water

Date Received: 12/02/14 18:14

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1664A			1045 mL	1000 mL	224727	12/15/14 12:35	AMR	TAL IRV
Total/NA	Analysis	1664A		1	1045 mL	1000 mL	224736	12/15/14 12:53	AMR	TAL IRV

Client Sample ID: Outfall009_20141203_Comp

Lab Sample ID: 440-94934-1

Date Collected: 12/03/14 10:44

Matrix: Water

Date Received: 12/03/14 15:59

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	5 mL		222486	12/04/14 18:53	SP	TAL IRV
Total/NA	Analysis	314.0		1	1 mL		225737	12/19/14 15:13	CH	TAL IRV
Total/NA	Analysis	NO3NO2 Calc		1			224801	12/15/14 16:16	TN	TAL IRV
Total	Prep	1613			1048 mL	20 uL	4346015_P	12/12/14 13:00		TAL KNX
Total	Analysis	1613B		1			4346015	12/17/14 04:04	PMP	TAL KNX
Dissolved	Filtration	FILTRATION			250 mL	250 mL	222918	12/05/14 17:28	APS	TAL IRV
Dissolved	Prep	200.2			25 mL	25 mL	223919	12/10/14 21:52	APS	TAL IRV
Dissolved	Analysis	200.8		1	25 mL	25 mL	224119	12/11/14 14:06	NH	TAL IRV
Total Recoverable	Prep	200.2			25 mL	25 mL	223792	12/10/14 14:45	ND	TAL IRV
Total Recoverable	Analysis	200.8		1	25 mL	25 mL	223958	12/10/14 22:45	NH	TAL IRV
Dissolved	Filtration	FILTRATION			250 mL	250 mL	222918	12/05/14 17:28	APS	TAL IRV
Dissolved	Prep	245.1			20 mL	20 mL	223422	12/09/14 10:15	JS1	TAL IRV
Dissolved	Analysis	245.1		1	20 mL	20 mL	223710	12/09/14 19:22	DB	TAL IRV
Total/NA	Prep	245.1			20 mL	20 mL	223421	12/09/14 10:12	JS1	TAL IRV
Total/NA	Analysis	245.1		1	20 mL	20 mL	223786	12/09/14 19:46	DB	TAL IRV
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	223730	12/10/14 11:34	XL	TAL IRV
Total/NA	Analysis	SM 2540D		1	400 mL	1000 mL	223840	12/10/14 16:33	NTN	TAL IRV
Total/NA	Prep	Distill/CN			50 mL	50 mL	224778	12/15/14 15:08	BS	TAL IRV
Total/NA	Analysis	SM 4500 CN E		1	50 mL	50 mL	224827	12/15/14 17:50	BS	TAL IRV
Total/NA	Prep	Evaporation			200 mL	1.0 g	164555	12/19/14 16:19	MJS	TAL SL
Total/NA	Analysis	900.0		1	200 mL		165375	12/24/14 09:12	RTM	TAL SL
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 mL	161776	12/08/14 11:24	MRB	TAL SL
Total/NA	Analysis	901.1		1	1000 mL		162157	12/09/14 17:52	SMP	TAL SL
Total/NA	Prep	PrecSep-21			954.55 mL	1.0 g	161419	12/05/14 13:43	LEM	TAL SL
Total/NA	Analysis	903.0		1	954.55 mL		165529	12/29/14 17:53	RTM	TAL SL
Total/NA	Prep	PrecSep_0			954.55 mL	1.0 g	161424	12/05/14 13:55	LEM	TAL SL
Total/NA	Analysis	904.0		1	954.55 mL		165529	12/29/14 12:45	RTM	TAL SL
Total/NA	Prep	PrecSep-7			505.76 mL	1.0 g	162945	12/12/14 16:41	BLH	TAL SL
Total/NA	Analysis	905		1	505.76 mL		165374	12/24/14 15:59	RTM	TAL SL
Total/NA	Prep	LSC_Dist_Susp			100.02 mL	1.0 g	165301	12/24/14 05:48	JDL	TAL SL
Total/NA	Analysis	906.0		1	100.02 mL		165512	12/24/14 15:53	JLW	TAL SL
Total/NA	Prep	ExtChrom			100.77 mL	1.0 mL	162442	12/10/14 10:33	SCB	TAL SL
Total/NA	Analysis	A-01-R		1	100.77 mL		163152	12/12/14 14:04	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			166216	12/05/14 16:07	RTM	TAL SL

TestAmerica Irvine

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Client Sample ID: Trip Blank

Lab Sample ID: 440-94934-2

Date Collected: 12/03/14 21:00

Matrix: Water

Date Received: 12/03/14 21:00

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 mL	1.0 g	164555	12/19/14 16:19	MJS	TAL SL
Total/NA	Analysis	900.0		1	200 mL		165376	12/24/14 09:19	RTM	TAL SL
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 mL	161776	12/08/14 11:24	MRB	TAL SL
Total/NA	Analysis	901.1		1	1000 mL		162152	12/09/14 20:14	SMP	TAL SL
Total/NA	Prep	PrecSep-21			972.28 mL	1.0 g	161419	12/05/14 13:43	LEM	TAL SL
Total/NA	Analysis	903.0		1	972.28 mL		165530	12/29/14 17:54	RTM	TAL SL
Total/NA	Prep	PrecSep_0			972.28 mL	1.0 g	161424	12/05/14 13:55	LEM	TAL SL
Total/NA	Analysis	904.0		1	972.28 mL		165529	12/29/14 12:45	RTM	TAL SL
Total/NA	Prep	PrecSep-7			1000.01 mL	1.0 g	162945	12/12/14 16:41	BLH	TAL SL
Total/NA	Analysis	905		1	1000.01 mL		165374	12/24/14 15:59	RTM	TAL SL
Total/NA	Prep	ExtChrom			500.50 mL	1.0 mL	162442	12/10/14 10:33	SCB	TAL SL
Total/NA	Analysis	A-01-R		1	500.50 mL		163153	12/12/14 14:04	MLK	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			166216	12/05/14 16:07	RTM	TAL SL

Laboratory References:

- SC0127 = Aquatic Testing Laboratories, 4350 Transport #107, Ventura, CA 93003
- TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022
- TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000
- TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566



QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 440-222486/4
Matrix: Water
Analysis Batch: 222486

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50	0.25	mg/L			12/04/14 08:47	1
Sulfate	ND		0.50	0.25	mg/L			12/04/14 08:47	1

Lab Sample ID: LCS 440-222486/2
Matrix: Water
Analysis Batch: 222486

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.00	4.92		mg/L		98	90 - 110
Sulfate	5.00	4.73		mg/L		95	90 - 110

Lab Sample ID: 440-95052-A-1 MS
Matrix: Water
Analysis Batch: 222486

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	160		5.00	161	BB	mg/L		31	80 - 120
Sulfate	11		5.00	15.4		mg/L		83	80 - 120

Lab Sample ID: 440-95052-A-1 MSD
Matrix: Water
Analysis Batch: 222486

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	Limit
Chloride	160		5.00	161	BB	mg/L		38	80 - 120	0	20
Sulfate	11		5.00	15.7		mg/L		88	80 - 120	2	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 440-225737/3
Matrix: Water
Analysis Batch: 225737

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	0.95	ug/L			12/19/14 09:07	1

Lab Sample ID: LCS 440-225737/2
Matrix: Water
Analysis Batch: 225737

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	23.8		ug/L		95	85 - 115

Lab Sample ID: MRL 440-225737/5
Matrix: Water
Analysis Batch: 225737

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	4.00	3.94	J,DX	ug/L		98	75 - 125

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: 440-96900-B-1 MS

Matrix: Water

Analysis Batch: 225737

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	9.9		25.0	32.7		ug/L		91	80 - 120

Lab Sample ID: 440-96900-B-1 MSD

Matrix: Water

Analysis Batch: 225737

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	9.9		25.0	32.6		ug/L		91	80 - 120	0	20

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

Lab Sample ID: H4L12000015B

Matrix: Water

Analysis Batch: 4346015

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 4346015_P

Analyte	MB Result	MB Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000100	0.00000710	ug/L		12/12/14 13:00	12/17/14 03:03	1
Total TCDD	ND		0.0000100	0.00000710	ug/L		12/12/14 13:00	12/17/14 03:03	1
1,2,3,7,8-PeCDD	ND		0.0000500	0.00000310	ug/L		12/12/14 13:00	12/17/14 03:03	1
Total PeCDD	ND		0.0000500	0.00000310	ug/L		12/12/14 13:00	12/17/14 03:03	1
1,2,3,4,7,8-HxCDD	ND		0.0000500	0.00000256	ug/L		12/12/14 13:00	12/17/14 03:03	1
1,2,3,6,7,8-HxCDD	ND		0.0000500	0.00000298	ug/L		12/12/14 13:00	12/17/14 03:03	1
1,2,3,7,8,9-HxCDD	ND		0.0000500	0.00000256	ug/L		12/12/14 13:00	12/17/14 03:03	1
Total HxCDD	ND		0.0000500	0.00000269	ug/L		12/12/14 13:00	12/17/14 03:03	1
1,2,3,4,6,7,8-HpCDD	ND		0.0000500	0.00000336	ug/L		12/12/14 13:00	12/17/14 03:03	1
Total HpCDD	ND		0.0000500	0.00000336	ug/L		12/12/14 13:00	12/17/14 03:03	1
OCDD	0.00000656	Q J	0.000100	0.00000360	ug/L		12/12/14 13:00	12/17/14 03:03	1
2,3,7,8-TCDF	ND		0.0000100	0.00000469	ug/L		12/12/14 13:00	12/17/14 03:03	1
Total TCDF	ND		0.0000100	0.00000469	ug/L		12/12/14 13:00	12/17/14 03:03	1
1,2,3,7,8-PeCDF	ND		0.0000500	0.00000204	ug/L		12/12/14 13:00	12/17/14 03:03	1
2,3,4,7,8-PeCDF	ND		0.0000500	0.00000194	ug/L		12/12/14 13:00	12/17/14 03:03	1
Total PeCDF	ND		0.0000500	0.00000199	ug/L		12/12/14 13:00	12/17/14 03:03	1
1,2,3,4,7,8-HxCDF	ND		0.0000500	0.00000143	ug/L		12/12/14 13:00	12/17/14 03:03	1
1,2,3,6,7,8-HxCDF	ND		0.0000500	0.00000135	ug/L		12/12/14 13:00	12/17/14 03:03	1
2,3,4,6,7,8-HxCDF	ND		0.0000500	0.00000137	ug/L		12/12/14 13:00	12/17/14 03:03	1
1,2,3,7,8,9-HxCDF	ND		0.0000500	0.00000166	ug/L		12/12/14 13:00	12/17/14 03:03	1
Total HxCDF	ND		0.0000500	0.00000144	ug/L		12/12/14 13:00	12/17/14 03:03	1
1,2,3,4,6,7,8-HpCDF	ND		0.0000500	0.00000271	ug/L		12/12/14 13:00	12/17/14 03:03	1
1,2,3,4,7,8,9-HpCDF	ND		0.0000500	0.00000340	ug/L		12/12/14 13:00	12/17/14 03:03	1
Total HpCDF	ND		0.0000500	0.00000302	ug/L		12/12/14 13:00	12/17/14 03:03	1
OCDF	0.00000630	Q J	0.000100	0.00000392	ug/L		12/12/14 13:00	12/17/14 03:03	1

Surrogate	%Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	116		35 - 197	12/12/14 13:00	12/17/14 03:03	1

Internal Standard	%Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	94		25 - 164	12/12/14 13:00	12/17/14 03:03	1

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

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

Lab Sample ID: H4L120000015B

Matrix: Water

Analysis Batch: 4346015

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 4346015_P

Internal Standard	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C-1,2,3,7,8-PeCDD	101		25 - 181	12/12/14 13:00	12/17/14 03:03	1
13C-1,2,3,4,7,8-HxCDD	84		32 - 141	12/12/14 13:00	12/17/14 03:03	1
13C-1,2,3,6,7,8-HxCDD	75		28 - 130	12/12/14 13:00	12/17/14 03:03	1
13C-1,2,3,4,6,7,8-HpCDD	73		23 - 140	12/12/14 13:00	12/17/14 03:03	1
13C-OCDD	71		17 - 157	12/12/14 13:00	12/17/14 03:03	1
13C-2,3,7,8-TCDF	87		24 - 169	12/12/14 13:00	12/17/14 03:03	1
13C-1,2,3,7,8-PeCDF	92		24 - 185	12/12/14 13:00	12/17/14 03:03	1
13C-2,3,4,7,8-PeCDF	93		21 - 178	12/12/14 13:00	12/17/14 03:03	1
13C-1,2,3,4,7,8-HxCDF	72		26 - 152	12/12/14 13:00	12/17/14 03:03	1
13C-1,2,3,6,7,8-HxCDF	71		26 - 123	12/12/14 13:00	12/17/14 03:03	1
13C-2,3,4,6,7,8-HxCDF	76		28 - 136	12/12/14 13:00	12/17/14 03:03	1
13C-1,2,3,7,8,9-HxCDF	76		29 - 147	12/12/14 13:00	12/17/14 03:03	1
13C-1,2,3,4,6,7,8-HpCDF	70		28 - 143	12/12/14 13:00	12/17/14 03:03	1
13C-1,2,3,4,7,8,9-HpCDF	70		26 - 138	12/12/14 13:00	12/17/14 03:03	1
13C-OCDF	63		17 - 157	12/12/14 13:00	12/17/14 03:03	1

Lab Sample ID: H4L120000015C

Matrix: Water

Analysis Batch: 4346015

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 4346015_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3,7,8-PeCDD	0.00100	0.00101		ug/L		101	70 - 142
1,2,3,4,7,8-HxCDD	0.00100	0.000955		ug/L		95	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000938		ug/L		94	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.00105		ug/L		105	64 - 162
1,2,3,4,6,7,8-HpCDD	0.00100	0.000949		ug/L		95	70 - 140
OCDD	0.00200	0.00177	B	ug/L		88	78 - 144
2,3,7,8-TCDF	0.000200	0.000210		ug/L		105	75 - 158
1,2,3,7,8-PeCDF	0.00100	0.000931		ug/L		93	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000978		ug/L		98	68 - 160
1,2,3,4,7,8-HxCDF	0.00100	0.000958		ug/L		96	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000953		ug/L		95	84 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000951		ug/L		95	70 - 156
1,2,3,7,8,9-HxCDF	0.00100	0.000972		ug/L		97	78 - 130
1,2,3,4,6,7,8-HpCDF	0.00100	0.000926		ug/L		93	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000953		ug/L		95	78 - 138
OCDF	0.00200	0.00185	B	ug/L		93	63 - 170

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
37Cl4-2,3,7,8-TCDD	114		31 - 191

Internal Standard	LCS LCS		Limits
	%Recovery	Qualifier	
13C-2,3,7,8-TCDD	83		20 - 175
13C-1,2,3,7,8-PeCDD	103		21 - 227
13C-1,2,3,4,7,8-HxCDD	89		21 - 193
13C-1,2,3,6,7,8-HxCDD	81		25 - 163

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

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

Lab Sample ID: H4L120000015C
Matrix: Water
Analysis Batch: 4346015

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 4346015_P

Internal Standard	LCS		Limits
	%Recovery	Qualifier	
13C-1,2,3,4,6,7,8-HpCDD	86		26 - 166
13C-OCDD	90		13 - 199
13C-2,3,7,8-TCDF	80		22 - 152
13C-1,2,3,7,8-PeCDF	89		21 - 192
13C-2,3,4,7,8-PeCDF	87		13 - 328
13C-1,2,3,4,7,8-HxCDF	78		19 - 202
13C-1,2,3,6,7,8-HxCDF	78		21 - 159
13C-2,3,4,6,7,8-HxCDF	83		22 - 176
13C-1,2,3,7,8,9-HxCDF	80		17 - 205
13C-1,2,3,4,6,7,8-HpCDF	80		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	81		20 - 186
13C-OCDF	80		13 - 199

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 440-223792/1-A
Matrix: Water
Analysis Batch: 223958

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 223792

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cadmium	ND		1.0	0.25	ug/L		12/10/14 14:45	12/10/14 21:49	1
Copper	ND		2.0	0.50	ug/L		12/10/14 14:45	12/10/14 21:49	1
Lead	ND		1.0	0.50	ug/L		12/10/14 14:45	12/10/14 21:49	1
Antimony	ND		2.0	0.50	ug/L		12/10/14 14:45	12/10/14 21:49	1
Thallium	ND		1.0	0.50	ug/L		12/10/14 14:45	12/10/14 21:49	1

Lab Sample ID: LCS 440-223792/2-A
Matrix: Water
Analysis Batch: 223958

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 223792

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Cadmium	80.0	80.8		ug/L		101	85 - 115
Copper	80.0	79.6		ug/L		100	85 - 115
Lead	80.0	79.6		ug/L		99	85 - 115
Antimony	80.0	80.5		ug/L		101	85 - 115
Thallium	80.0	81.0		ug/L		101	85 - 115

Lab Sample ID: 440-95898-A-11-B MS
Matrix: Water
Analysis Batch: 223958

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 223792

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Cadmium	ND		80.0	79.1		ug/L		99	70 - 130
Copper	320		80.0	399	BB	ug/L		93	70 - 130
Lead	0.62	J,DX	80.0	81.1		ug/L		101	70 - 130
Antimony	ND		80.0	82.1		ug/L		103	70 - 130
Thallium	ND		80.0	77.6		ug/L		97	70 - 130

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

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

Lab Sample ID: 440-95898-A-11-C MSD
Matrix: Water
Analysis Batch: 223958

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 223792

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Cadmium	ND		80.0	78.3		ug/L		98	70 - 130	1	20
Copper	320		80.0	406	BB	ug/L		102	70 - 130	2	20
Lead	0.62	J,DX	80.0	81.5		ug/L		101	70 - 130	1	20
Antimony	ND		80.0	81.6		ug/L		102	70 - 130	1	20
Thallium	ND		80.0	76.8		ug/L		96	70 - 130	1	20

Lab Sample ID: MB 440-222918/1-E
Matrix: Water
Analysis Batch: 224119

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 223919

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cadmium	ND		1.0	0.25	ug/L		12/10/14 21:52	12/11/14 13:50	1
Copper	ND		2.0	0.50	ug/L		12/10/14 21:52	12/11/14 13:50	1
Lead	ND		1.0	0.50	ug/L		12/10/14 21:52	12/11/14 13:50	1
Antimony	ND		2.0	0.50	ug/L		12/10/14 21:52	12/11/14 13:50	1
Thallium	ND		1.0	0.50	ug/L		12/10/14 21:52	12/11/14 13:50	1

Lab Sample ID: LCS 440-222918/2-E
Matrix: Water
Analysis Batch: 224119

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 223919

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
Cadmium	80.0	80.0		ug/L		100	85 - 115
Copper	80.0	78.7		ug/L		98	85 - 115
Lead	80.0	79.1		ug/L		99	85 - 115
Antimony	80.0	79.0		ug/L		99	85 - 115
Thallium	80.0	78.8		ug/L		99	85 - 115

Lab Sample ID: LCSD 440-222918/3-B
Matrix: Water
Analysis Batch: 224119

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 223919

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec.	RPD	Limit
		Result	Qualifier				Limits		
Cadmium	80.0	79.3		ug/L		99	85 - 115	1	20
Copper	80.0	79.6		ug/L		100	85 - 115	1	20
Lead	80.0	81.5		ug/L		102	85 - 115	3	20
Antimony	80.0	79.0		ug/L		99	85 - 115	0	20
Thallium	80.0	79.2		ug/L		99	85 - 115	1	20

Lab Sample ID: 440-94754-G-2-D MS
Matrix: Water
Analysis Batch: 224119

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 223919

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				Limits
Cadmium	ND		80.0	80.7		ug/L		101	70 - 130
Copper	8.0		80.0	90.3		ug/L		103	70 - 130
Lead	ND		80.0	82.3		ug/L		103	70 - 130
Antimony	ND		80.0	80.6		ug/L		101	70 - 130
Thallium	ND		80.0	81.7		ug/L		102	70 - 130

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

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

Lab Sample ID: 440-94754-G-2-E MSD
Matrix: Water
Analysis Batch: 224119

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 223919

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits			
Cadmium	ND		80.0	81.6		ug/L		102	70 - 130	1		20
Copper	8.0		80.0	88.8		ug/L		101	70 - 130	2		20
Lead	ND		80.0	82.5		ug/L		103	70 - 130	0		20
Antimony	ND		80.0	81.3		ug/L		102	70 - 130	1		20
Thallium	ND		80.0	82.5		ug/L		103	70 - 130	1		20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 440-223421/1-A
Matrix: Water
Analysis Batch: 223786

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 223421

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.20	0.10	ug/L		12/09/14 10:12	12/09/14 19:33	1

Lab Sample ID: LCS 440-223421/2-A
Matrix: Water
Analysis Batch: 223786

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 223421

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
							Added
Mercury	8.00	8.15		ug/L		102	85 - 115

Lab Sample ID: 440-94891-B-1-G MS
Matrix: Water
Analysis Batch: 223786

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 223421

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				Limits
Mercury	0.48		8.00	7.64		ug/L		90	70 - 130

Lab Sample ID: 440-94891-B-1-H MSD
Matrix: Water
Analysis Batch: 223786

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 223421

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits			
Mercury	0.48		8.00	7.47		ug/L		87	70 - 130	2		20

Lab Sample ID: MB 440-222918/1-D
Matrix: Water
Analysis Batch: 223710

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 223422

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.20	0.10	ug/L		12/09/14 10:15	12/09/14 19:17	1

Lab Sample ID: LCS 440-222918/2-D
Matrix: Water
Analysis Batch: 223710

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 223422

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
							Added
Mercury	8.00	7.84		ug/L		98	85 - 115

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: 440-94934-1 MS
Matrix: Water
Analysis Batch: 223710

Client Sample ID: Outfall009_20141203_Comp
Prep Type: Dissolved
Prep Batch: 223422

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		8.00	7.66		ug/L		96	70 - 130

Lab Sample ID: 440-94934-1 MSD
Matrix: Water
Analysis Batch: 223710

Client Sample ID: Outfall009_20141203_Comp
Prep Type: Dissolved
Prep Batch: 223422

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		8.00	7.84		ug/L		98	70 - 130	2	20

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 440-224727/1-A
Matrix: Water
Analysis Batch: 224736

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 224727

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		5.0	1.4	mg/L		12/15/14 12:35	12/15/14 12:53	1

Lab Sample ID: LCS 440-224727/2-A
Matrix: Water
Analysis Batch: 224736

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 224727

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	20.0	19.0		mg/L		95	78 - 114

Lab Sample ID: LCSD 440-224727/3-A
Matrix: Water
Analysis Batch: 224736

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 224727

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
HEM	20.0	19.5		mg/L		97	78 - 114	3	11

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

Lab Sample ID: MB 440-223730/1
Matrix: Water
Analysis Batch: 223730

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	5.0	mg/L			12/10/14 11:34	1

Lab Sample ID: LCS 440-223730/2
Matrix: Water
Analysis Batch: 223730

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	1000		mg/L		100	90 - 110

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

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

Lab Sample ID: 440-94842-A-3 DU
Matrix: Water
Analysis Batch: 223730

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU		Unit	D	RPD	Limit
			Result	Qualifier				
Total Dissolved Solids	590		588		mg/L		1	5

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

Lab Sample ID: MB 440-223840/2
Matrix: Water
Analysis Batch: 223840

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

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Suspended Solids	ND		1.0	0.50	mg/L			12/10/14 16:33	1

Lab Sample ID: LCS 440-223840/1
Matrix: Water
Analysis Batch: 223840

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

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Total Suspended Solids	1000	1020		mg/L		102	85 - 115

Lab Sample ID: 440-96134-A-1 DU
Matrix: Water
Analysis Batch: 223840

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU		Unit	D	RPD	Limit
			Result	Qualifier				
Total Suspended Solids	14		14.0		mg/L		2	10

Method: SM 4500 CN E - Cyanide, Total (Low Level)

Lab Sample ID: MB 440-224778/1-A
Matrix: Water
Analysis Batch: 224827

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 224778

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cyanide, Total	ND		5.0	2.5	ug/L		12/15/14 15:08	12/15/14 17:50	1

Lab Sample ID: LCS 440-224778/2-A
Matrix: Water
Analysis Batch: 224827

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 224778

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Cyanide, Total	100	99.8		ug/L		100	90 - 110

Lab Sample ID: LCSD 440-224778/3-A
Matrix: Water
Analysis Batch: 224827

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 224778

Analyte	Spike Added	LCSD		Unit	D	%Rec	%Rec. Limits	RPD	Limit
		Result	Qualifier						
Cyanide, Total	100	99.0		ug/L		99	90 - 110	1	10

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Method: SM 4500 CN E - Cyanide, Total (Low Level) (Continued)

Lab Sample ID: 440-96113-A-5-B MS
Matrix: Water
Analysis Batch: 224827

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 224778

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	ND		100	2.54	J,DX LN	ug/L		3	70 - 115

Lab Sample ID: 440-96113-A-5-C MSD
Matrix: Water
Analysis Batch: 224827

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 224778

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	ND		100	ND	LN	ug/L		0	70 - 115	NC	15

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-164555/1-A
Matrix: Water
Analysis Batch: 165374

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 164555

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.3702	U	0.856	0.857	1.73	pCi/L	12/19/14 16:19	12/24/14 08:53	1
Gross Beta	0.3308	U	0.579	0.580	0.986	pCi/L	12/19/14 16:19	12/24/14 08:53	1

Lab Sample ID: LCS 160-164555/2-A
Matrix: Water
Analysis Batch: 165374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 164555

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Gross Alpha	50.1	54.65		8.15	2.47	pCi/L	109	73 - 133

Lab Sample ID: LCSB 160-164555/3-A
Matrix: Water
Analysis Batch: 165374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 164555

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Gross Beta	96.0	97.52		10.3	1.10	pCi/L	102	75 - 125

Lab Sample ID: 600-103720-B-11-B MS
Matrix: Water
Analysis Batch: 165375

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 164555

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Unit	D	%Rec	%Rec. Limits
Gross Alpha	1.56	U	53.8	53.51		pCi/L		99	35 - 150

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QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity (Continued)

Lab Sample ID: 600-103720-B-11-C MSBT
Matrix: Water
Analysis Batch: 165375

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 164555

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Gross Beta	0.195	U	103	102.9		10.9	0.970	pCi/L	100	89 - 143

Lab Sample ID: 600-103720-B-11-D DU
Matrix: Water
Analysis Batch: 165568

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 164555

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	MDC	Unit	RER	RER Limit
Gross Alpha	1.56	U	1.578	U	1.46	2.24	pCi/L	0.01	1
Gross Beta	0.195	U	1.357		0.790	1.16	pCi/L	0.79	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-161776/1-A
Matrix: Water
Analysis Batch: 162149

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 161776

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	3.747	U	8.03	8.04	14.0	pCi/L	12/08/14 11:24	12/09/14 17:00	1
Potassium-40	-37.43	U	227	227	244	pCi/L	12/08/14 11:24	12/09/14 17:00	1

Lab Sample ID: LCS 160-161776/2-A
Matrix: Water
Analysis Batch: 162155

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 161776

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Americium-241	137000	133300		15400	561	pCi/L	97	90 - 111
Cesium-137	49500	48970		4920	200	pCi/L	99	90 - 111
Cobalt-60	53000	52350		5180	124	pCi/L	99	89 - 110

Lab Sample ID: 440-94934-1 DU
Matrix: Water
Analysis Batch: 162156

Client Sample ID: Outfall009_20141203_Comp
Prep Type: Total/NA
Prep Batch: 161776

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	MDC	Unit	RER	RER Limit
Cesium-137	0.0266	U	1.721	U	5.25	9.42	pCi/L	0.14	1
Potassium-40	-92.7	U	-103.9	U	4150	210	pCi/L	0	1

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-161419/1-A

Matrix: Water

Analysis Batch: 165529

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 161419

Analyte	MB MB		Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)					
Radium-226	0.06415	U	0.111	0.111	0.194	pCi/L	12/05/14 13:43	12/29/14 17:52	1
Carrier	MB MB		Limits		Prepared	Analyzed	Dil Fac		
Ba Carrier	%Yield	Qualifier	Limits						
Ba Carrier	101		40 - 110		12/05/14 13:43	12/29/14 17:52	1		

Lab Sample ID: LCS 160-161419/2-A

Matrix: Water

Analysis Batch: 165529

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 161419

Analyte	Spike Added	LCS Result	LCS Qual	Total	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)				
Radium-226	11.2	9.767		1.11	0.317	pCi/L	87	68 - 137
Carrier	LCS LCS		Limits		Prepared	Analyzed	Dil Fac	
Ba Carrier	%Yield	Qualifier	Limits					
Ba Carrier	103		40 - 110		12/05/14 13:43	12/29/14 17:52	1	

Lab Sample ID: 440-94733-A-3-B DU

Matrix: Water

Analysis Batch: 165529

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 161419

Analyte	Sample Sample		DU DU	Total	MDC	Unit	Prepared	Analyzed	Dil Fac	RER	
	Result	Qual	Result	Qual						Uncert. (2σ+/-)	RER
Radium-226	0.0398	U	0.02437	U	0.108	0.202	pCi/L			0.08	1
Carrier	DU DU		Limits		Prepared	Analyzed	Dil Fac				
Ba Carrier	%Yield	Qualifier	Limits								
Ba Carrier	106		40 - 110		12/05/14 13:55	12/29/14 12:43	1				

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-161424/1-A

Matrix: Water

Analysis Batch: 165530

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 161424

Analyte	MB MB		Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)					
Radium-228	0.1902	U	0.221	0.222	0.364	pCi/L	12/05/14 13:55	12/29/14 12:43	1
Carrier	MB MB		Limits		Prepared	Analyzed	Dil Fac		
Ba Carrier	%Yield	Qualifier	Limits						
Ba Carrier	101		40 - 110		12/05/14 13:55	12/29/14 12:43	1		
Y Carrier	MB MB		Limits		Prepared	Analyzed	Dil Fac		
Y Carrier	%Yield	Qualifier	Limits						
Y Carrier	90.5		40 - 110		12/05/14 13:55	12/29/14 12:43	1		

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QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-161424/2-A
Matrix: Water
Analysis Batch: 165530

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 161424

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Radium-228	3.58	3.373		0.508	0.322	pCi/L	94	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	103		40 - 110
Y Carrier	88.2		40 - 110

Lab Sample ID: 440-94733-A-3-D DU
Matrix: Water
Analysis Batch: 165529

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 161424

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	MDC	Unit	RER	RER Limit
Radium-228	0.215	U	0.1521	U	0.217	0.362	pCi/L	0.15	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	106		40 - 110
Y Carrier	88.2		40 - 110

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-162945/1-A
Matrix: Water
Analysis Batch: 165374

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 162945

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.05873	U	0.139	0.139	0.246	pCi/L	12/12/14 16:41	12/24/14 15:57	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	87.2		40 - 110	12/12/14 16:41	12/24/14 15:57	1
Y Carrier	95.3		40 - 110	12/12/14 16:41	12/24/14 15:57	1

Lab Sample ID: LCS 160-162945/2-A
Matrix: Water
Analysis Batch: 165374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 162945

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Strontium-90	8.96	9.177		0.864	0.247	pCi/L	102	90 - 134

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	85.9		40 - 110
Y Carrier	91.6		40 - 110

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QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Method: 905 - Strontium-90 (GFPC) (Continued)

Lab Sample ID: 440-94733-A-3-K DU
Matrix: Water
Analysis Batch: 165374

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 162945

Analyte	Sample	Sample	DU	DU	Total	MDC	Unit	Prepared	Analyzed	Dil Fac	RER	Limit
	Result	Qual	Result	Qual	Uncert. (2σ+/-)							
Strontium-90	-0.0976	U	-0.09837	U	0.129	0.235	pCi/L				0	1

Carrier	DU	DU	Limits
	%Yield	Qualifier	
Sr Carrier	85.4		40 - 110
Y Carrier	95.3		40 - 110

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-165301/1-A
Matrix: Water
Analysis Batch: 165512

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 165301

Analyte	MB	MB	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)					
Tritium	132.4	U	195	196	327	pCi/L	12/24/14 05:48	12/24/14 14:44	1

Lab Sample ID: LCS 160-165301/2-A
Matrix: Water
Analysis Batch: 166180

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 165301

Analyte	Spike	LCS	LCS	Total	MDC	Unit	%Rec	%Rec.	Limits
	Added	Result	Qual	Uncert. (2σ+/-)					
Tritium	3450	3392		532	402	pCi/L	98	74 - 114	

Lab Sample ID: LCSD 160-165301/3-A
Matrix: Water
Analysis Batch: 165512

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 165301

Analyte	Spike	LCSD	LCSD	Total	MDC	Unit	%Rec	%Rec.	Limits	RER	Limit
	Added	Result	Qual	Uncert. (2σ+/-)							
Tritium	3450	3511		526	329	pCi/L	102	74 - 114	0.62	1	

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-162442/1-A
Matrix: Water
Analysis Batch: 163147

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 162442

Analyte	MB	MB	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)					
Total Uranium	0.04436	U	0.08317	0.08320	0.122	pCi/L	12/10/14 10:33	12/12/14 14:05	1

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: LCS 160-162442/2-A

Matrix: Water

Analysis Batch: 163148

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 162442

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Uranium-234	12.7	12.46		1.49	0.117	pCi/L	98	84 - 120
Uranium-238	13.0	12.81		1.52	0.117	pCi/L	98	83 - 121

Tracer	LCS %Yield	LCS Qualifier	Limits
Uranium-232	85.4		30 - 110

Lab Sample ID: 440-94733-A-3-G DU

Matrix: Water

Analysis Batch: 163151

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 162442

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	MDC	Unit	RER	RER Limit
Total Uranium	0.0934	U	0.02697	U	0.06448	0.132	pCi/L	0.34	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

HPLC/IC

Analysis Batch: 222486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94934-1	Outfall009_20141203_Comp	Total/NA	Water	300.0	
440-95052-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
440-95052-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
LCS 440-222486/2	Lab Control Sample	Total/NA	Water	300.0	
MB 440-222486/4	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 224801

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94934-1	Outfall009_20141203_Comp	Total/NA	Water	NO3NO2 Calc	

Analysis Batch: 225737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94934-1	Outfall009_20141203_Comp	Total/NA	Water	314.0	
440-96900-B-1 MS	Matrix Spike	Total/NA	Water	314.0	
440-96900-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	
LCS 440-225737/2	Lab Control Sample	Total/NA	Water	314.0	
MB 440-225737/3	Method Blank	Total/NA	Water	314.0	
MRL 440-225737/5	Lab Control Sample	Total/NA	Water	314.0	

Specialty Organics

Analysis Batch: 4346015

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94934-1	Outfall009_20141203_Comp	Total	Water	1613B	
H4L120000015B	Method Blank	Total	Water	1613B	
H4L120000015C	Lab Control Sample	Total	Water	1613B	

Prep Batch: 4346015_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94934-1	Outfall009_20141203_Comp	Total	Water	1613	
H4L120000015B	Method Blank	Total	Water	1613	
H4L120000015C	Lab Control Sample	Total	Water	1613	

Metals

Filtration Batch: 222918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94754-G-2-D MS	Matrix Spike	Dissolved	Water	FILTRATION	
440-94754-G-2-E MSD	Matrix Spike Duplicate	Dissolved	Water	FILTRATION	
440-94934-1	Outfall009_20141203_Comp	Dissolved	Water	FILTRATION	
440-94934-1 MS	Outfall009_20141203_Comp	Dissolved	Water	FILTRATION	
440-94934-1 MSD	Outfall009_20141203_Comp	Dissolved	Water	FILTRATION	
LCS 440-222918/2-D	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 440-222918/2-E	Lab Control Sample	Dissolved	Water	FILTRATION	
LCSD 440-222918/3-B	Lab Control Sample Dup	Dissolved	Water	FILTRATION	
MB 440-222918/1-D	Method Blank	Dissolved	Water	FILTRATION	
MB 440-222918/1-E	Method Blank	Dissolved	Water	FILTRATION	

TestAmerica Irvine

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Metals (Continued)

Prep Batch: 223421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94891-B-1-G MS	Matrix Spike	Total/NA	Water	245.1	
440-94891-B-1-H MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	
440-94934-1	Outfall009_20141203_Comp	Total/NA	Water	245.1	
LCS 440-223421/2-A	Lab Control Sample	Total/NA	Water	245.1	
MB 440-223421/1-A	Method Blank	Total/NA	Water	245.1	

Prep Batch: 223422

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94934-1	Outfall009_20141203_Comp	Dissolved	Water	245.1	222918
440-94934-1 MS	Outfall009_20141203_Comp	Dissolved	Water	245.1	222918
440-94934-1 MSD	Outfall009_20141203_Comp	Dissolved	Water	245.1	222918
LCS 440-222918/2-D	Lab Control Sample	Dissolved	Water	245.1	222918
MB 440-222918/1-D	Method Blank	Dissolved	Water	245.1	222918

Analysis Batch: 223710

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94934-1	Outfall009_20141203_Comp	Dissolved	Water	245.1	223422
440-94934-1 MS	Outfall009_20141203_Comp	Dissolved	Water	245.1	223422
440-94934-1 MSD	Outfall009_20141203_Comp	Dissolved	Water	245.1	223422
LCS 440-222918/2-D	Lab Control Sample	Dissolved	Water	245.1	223422
MB 440-222918/1-D	Method Blank	Dissolved	Water	245.1	223422

Analysis Batch: 223786

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94891-B-1-G MS	Matrix Spike	Total/NA	Water	245.1	223421
440-94891-B-1-H MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	223421
440-94934-1	Outfall009_20141203_Comp	Total/NA	Water	245.1	223421
LCS 440-223421/2-A	Lab Control Sample	Total/NA	Water	245.1	223421
MB 440-223421/1-A	Method Blank	Total/NA	Water	245.1	223421

Prep Batch: 223792

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94934-1	Outfall009_20141203_Comp	Total Recoverable	Water	200.2	
440-95898-A-11-B MS	Matrix Spike	Total Recoverable	Water	200.2	
440-95898-A-11-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	
LCS 440-223792/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-223792/1-A	Method Blank	Total Recoverable	Water	200.2	

Prep Batch: 223919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94754-G-2-D MS	Matrix Spike	Dissolved	Water	200.2	222918
440-94754-G-2-E MSD	Matrix Spike Duplicate	Dissolved	Water	200.2	222918
440-94934-1	Outfall009_20141203_Comp	Dissolved	Water	200.2	222918
LCS 440-222918/2-E	Lab Control Sample	Dissolved	Water	200.2	222918
LCSD 440-222918/3-B	Lab Control Sample Dup	Dissolved	Water	200.2	222918
MB 440-222918/1-E	Method Blank	Dissolved	Water	200.2	222918

Analysis Batch: 223958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94934-1	Outfall009_20141203_Comp	Total Recoverable	Water	200.8	223792
440-95898-A-11-B MS	Matrix Spike	Total Recoverable	Water	200.8	223792

TestAmerica Irvine

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Metals (Continued)

Analysis Batch: 223958 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-95898-A-11-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	223792
LCS 440-223792/2-A	Lab Control Sample	Total Recoverable	Water	200.8	223792
MB 440-223792/1-A	Method Blank	Total Recoverable	Water	200.8	223792

Analysis Batch: 224119

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94754-G-2-D MS	Matrix Spike	Dissolved	Water	200.8	223919
440-94754-G-2-E MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	223919
440-94934-1	Outfall009_20141203_Comp	Dissolved	Water	200.8	223919
LCS 440-222918/2-E	Lab Control Sample	Dissolved	Water	200.8	223919
LCSD 440-222918/3-B	Lab Control Sample Dup	Dissolved	Water	200.8	223919
MB 440-222918/1-E	Method Blank	Dissolved	Water	200.8	223919

General Chemistry

Analysis Batch: 223730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94842-A-3 DU	Duplicate	Total/NA	Water	SM 2540C	
440-94934-1	Outfall009_20141203_Comp	Total/NA	Water	SM 2540C	
LCS 440-223730/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 440-223730/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 223840

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94934-1	Outfall009_20141203_Comp	Total/NA	Water	SM 2540D	
440-96134-A-1 DU	Duplicate	Total/NA	Water	SM 2540D	
LCS 440-223840/1	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 440-223840/2	Method Blank	Total/NA	Water	SM 2540D	

Prep Batch: 224727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94732-1	Outfall009_20141202_Grab	Total/NA	Water	1664A	
LCS 440-224727/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 440-224727/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	
MB 440-224727/1-A	Method Blank	Total/NA	Water	1664A	

Analysis Batch: 224736

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94732-1	Outfall009_20141202_Grab	Total/NA	Water	1664A	224727
LCS 440-224727/2-A	Lab Control Sample	Total/NA	Water	1664A	224727
LCSD 440-224727/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	224727
MB 440-224727/1-A	Method Blank	Total/NA	Water	1664A	224727

Prep Batch: 224778

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94934-1	Outfall009_20141203_Comp	Total/NA	Water	Distill/CN	
440-96113-A-5-B MS	Matrix Spike	Total/NA	Water	Distill/CN	
440-96113-A-5-C MSD	Matrix Spike Duplicate	Total/NA	Water	Distill/CN	
LCS 440-224778/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
LCSD 440-224778/3-A	Lab Control Sample Dup	Total/NA	Water	Distill/CN	

TestAmerica Irvine

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

General Chemistry (Continued)

Prep Batch: 224778 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-224778/1-A	Method Blank	Total/NA	Water	Distill/CN	

Analysis Batch: 224827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94934-1	Outfall009_20141203_Comp	Total/NA	Water	SM 4500 CN E	224778
440-96113-A-5-B MS	Matrix Spike	Total/NA	Water	SM 4500 CN E	224778
440-96113-A-5-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 CN E	224778
LCS 440-224778/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	224778
LCS 440-224778/3-A	Lab Control Sample Dup	Total/NA	Water	SM 4500 CN E	224778
MB 440-224778/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	224778

Rad

Prep Batch: 161419

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94733-A-3-B DU	Duplicate	Total/NA	Water	PrecSep-21	
440-94934-1	Outfall009_20141203_Comp	Total/NA	Water	PrecSep-21	
440-94934-2	Trip Blank	Total/NA	Water	PrecSep-21	
LCS 160-161419/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
MB 160-161419/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 161424

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94733-A-3-D DU	Duplicate	Total/NA	Water	PrecSep_0	
440-94934-1	Outfall009_20141203_Comp	Total/NA	Water	PrecSep_0	
440-94934-2	Trip Blank	Total/NA	Water	PrecSep_0	
LCS 160-161424/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
MB 160-161424/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Prep Batch: 161776

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94934-1	Outfall009_20141203_Comp	Total/NA	Water	Fill_Geo-0	
440-94934-1 DU	Outfall009_20141203_Comp	Total/NA	Water	Fill_Geo-0	
440-94934-2	Trip Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-161776/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
MB 160-161776/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	

Prep Batch: 162442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94733-A-3-G DU	Duplicate	Total/NA	Water	ExtChrom	
440-94934-1	Outfall009_20141203_Comp	Total/NA	Water	ExtChrom	
440-94934-2	Trip Blank	Total/NA	Water	ExtChrom	
LCS 160-162442/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
MB 160-162442/1-A	Method Blank	Total/NA	Water	ExtChrom	

Prep Batch: 162945

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94733-A-3-K DU	Duplicate	Total/NA	Water	PrecSep-7	
440-94934-1	Outfall009_20141203_Comp	Total/NA	Water	PrecSep-7	
440-94934-2	Trip Blank	Total/NA	Water	PrecSep-7	

TestAmerica Irvine

QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Rad (Continued)

Prep Batch: 162945 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 160-162945/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
MB 160-162945/1-A	Method Blank	Total/NA	Water	PrecSep-7	

Prep Batch: 164555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94934-1	Outfall009_20141203_Comp	Total/NA	Water	Evaporation	
440-94934-2	Trip Blank	Total/NA	Water	Evaporation	
600-103720-B-11-B MS	Matrix Spike	Total/NA	Water	Evaporation	
600-103720-B-11-C MSBT	Matrix Spike	Total/NA	Water	Evaporation	
600-103720-B-11-D DU	Duplicate	Total/NA	Water	Evaporation	
LCS 160-164555/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-164555/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
MB 160-164555/1-A	Method Blank	Total/NA	Water	Evaporation	

Prep Batch: 165301

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-94934-1	Outfall009_20141203_Comp	Total/NA	Water	LSC_Dist_Susp	
LCS 160-165301/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
LCSD 160-165301/3-A	Lab Control Sample Dup	Total/NA	Water	LSC_Dist_Susp	
MB 160-165301/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
BB	Sample > 4X spike concentration
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

DIOXIN

Qualifier	Qualifier Description
Q	Estimated maximum possible concentration (EMPC).
J	Estimated result. Result is less than the reporting limit.
B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Metals

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
QP	Holding time Immediate. Analyzed as close to receipt as possible
BB	Sample > 4X spike concentration

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.
G	The Sample MDC is greater than the requested RL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
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)

Certification Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-15
Arizona	State Program	9	AZ0671	10-13-15
California	LA Cty Sanitation Districts	9	10256	01-31-15 *
California	State Program	9	2706	06-30-16
Guam	State Program	9	Cert. No. 12.002r	01-23-15 *
Hawaii	State Program	9	N/A	01-29-15 *
Nevada	State Program	9	CA015312007A	07-31-15
New Mexico	State Program	6	N/A	01-29-15 *
Northern Mariana Islands	State Program	9	MP0002	01-29-15 *
Oregon	NELAP	10	4005	01-29-15 *
USDA	Federal		P330-09-00080	06-06-15
USEPA UCMR	Federal	1	CA01531	01-31-15

Laboratory: TestAmerica Knoxville

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0688	06-17-15
California	State Program	9	2423	06-30-16
Colorado	State Program	8	N/A	02-28-15
Connecticut	State Program	1	PH-0223	09-30-15
Florida	NELAP	4	E87177	06-30-15
Georgia	State Program	4	906	04-13-17
Hawaii	State Program	9	N/A	04-13-15
Kansas	NELAP	7	E-10349	01-31-15
Kentucky (DW)	State Program	4	90101	12-31-14
L-A-B	DoD ELAP		L2311	02-13-16
Louisiana	NELAP	6	83979	06-30-15
Louisiana	NELAP	6	LA110001	12-31-15
Maryland	State Program	3	277	03-31-15
Michigan	State Program	5	9933	04-13-17
Nevada	State Program	9	TN00009	07-31-15
New Jersey	NELAP	2	TN001	06-30-15
New York	NELAP	2	10781	03-31-15
North Carolina (DW)	State Program	4	21705	07-31-15
North Carolina (WW/SW)	State Program	4	64	12-31-15
Ohio VAP	State Program	5	CL0059	03-26-15
Oklahoma	State Program	6	9415	08-31-15
Pennsylvania	NELAP	3	68-00576	12-31-14
South Carolina	State Program	4	84001	06-30-15
Tennessee	State Program	4	2014	04-13-17
Texas	NELAP	6	T104704380-TX	08-31-15
USDA	Federal		P330-13-00260	08-29-16
Utah	NELAP	8	QUAN3	07-31-15
Virginia	NELAP	3	460176	09-14-15
Virginia	State Program	3	165	06-30-15
Washington	State Program	10	C593	01-19-15
West Virginia (DW)	State Program	3	9955C	12-31-14
West Virginia DEP	State Program	3	345	04-30-15
Wisconsin	State Program	5	998044300	08-31-15

* Certification renewal pending - certification considered valid.

TestAmerica Irvine

Certification Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Routine outfall 009

TestAmerica Job ID: 440-94732-1

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-15
California	NELAP	9	2886	03-31-15
Connecticut	State Program	1	PH-0241	03-31-15
Florida	NELAP	4	E87689	06-30-15
Illinois	NELAP	5	200023	11-30-15
Iowa	State Program	7	373	12-01-14 *
Kansas	NELAP	7	E-10236	10-31-14 *
Kentucky (DW)	State Program	4	90125	12-31-14 *
L-A-B	DoD ELAP		L2305	01-10-16
Louisiana	NELAP	6	LA150017	12-31-16
Maryland	State Program	3	310	09-30-15
Missouri	State Program	7	780	06-30-15
Nevada	State Program	9	MO000542013-1	07-31-15
New Jersey	NELAP	2	MO002	06-30-15
New Mexico	State Program	6		06-30-10 *
New York	NELAP	2	11616	03-31-15
North Dakota	State Program	8	R207	06-30-15
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-15
Pennsylvania	NELAP	3	68-00540	02-28-15 *
South Carolina	State Program	4	85002001	06-30-15
Texas	NELAP	6	T104704193-13-6	07-31-15
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542013-5	07-31-15
Virginia	NELAP	3	460230	06-14-15
Washington	State Program	10	C592	08-30-15
West Virginia DEP	State Program	3	381	08-31-15

* Certification renewal pending - certification considered valid.

LABORATORY REPORT



**Aquatic
Testing
Laboratories**

"dedicated to providing quality aquatic toxicity testing"

4350 Transport Street, Unit 107
Ventura, CA 93003
(805) 650-0546 FAX (805) 650-0756
CA ELAP Cert. No.: 1775

Date: December 10, 2014

Client: TestAmerica, Irvine
17461 Derian Ave., Suite 100
Irvine, CA 92614
Attn: Debby Wilson

Laboratory No.: A-14120313-001
Job No.: 440-94732-1
Sample I.D.: Outfall009_20141203 (440-94934-1)

Sample Control: The sample was received by ATL chilled, within the recommended hold time and with the chain of custody record attached. Testing conducted on only one sample per client instruction.

Date Sampled: 12/03/14
Date Received: 12/03/14
Temp. Received: 5.6°C
Chlorine (TRC): 0.0 mg/l
Date Tested: 12/03/14 to 12/10/14

Sample Analysis: The following analyses were performed on your sample:

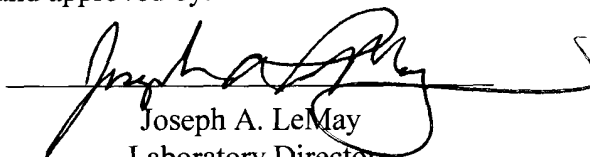
Ceriodaphnia dubia Survival and Reproduction Test (EPA Method 1002).

Attached are the test data generated from the analysis of your sample. All testing was conducted under the direct supervision of Joseph A. LeMay. Daily test readings were taken by Joseph A. LeMay (initialed: JAL) and Jacob LeMay (initialed: J).

Result Summary:

Chronic:	NOEC	TUc
<i>Ceriodaphnia</i> Survival:	100%	1.0
<i>Ceriodaphnia</i> Reproduction:	100%	1.0

Quality Control: Reviewed and approved by:


Joseph A. LeMay
Laboratory Director

**CERIODAPHNIA CHRONIC BIOASSAY
EPA METHOD 1002.0**



Lab No.: A-14120313-001
Client/ID: TestAmerica – Outfall 009

Date Tested: 12/03/14 to 12/10/14

TEST SUMMARY

Test type: Daily static-renewal.
Species: *Ceriodaphnia dubia*.
Age: < 24 hrs; all released within 8 hrs.
Test vessel size: 30 ml.
Number of test organisms per vessel: 1.
Temperature: 25 +/- 1°C.
Dilution water: Mod. hard reconstituted (MHRW).
QA/QC Batch No.: RT-141203.

Endpoints: Survival and Reproduction.
Source: In-laboratory culture.
Food: .1 ml YTC, algae per day.
Test solution volume: 15 ml.
Number of replicates: 10.
Photoperiod: 16/8 hrs. light/dark cycle.
Test duration: 7 days.
Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survival	Mean Number of Young Per Female
Control	100%	27.2
100% Sample	100%	28.4
Sample not statistically significantly less than Control for either endpoint.		

CHRONIC TOXICITY

Survival NOEC	100%
Survival TUC	1.0
Reproduction NOEC	100%
Reproduction TUC	1.0

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥80%	Pass (100% survival)
≥15 young per surviving control female	Pass (27.2 young)
≥60% surviving controls had 3 broods	Pass (100% with 3 broods)
PMSD <47% for reproduction; if >47% and no toxicity at IWC, the test must be repeated	Pass (PMSD = 5.9%)
Statistically significantly different concentrations relative difference >13%	Pass (no concentration significantly different)
Concentration response relationship acceptable	Pass (no significant response at concentration tested)

Ceriodaphnia Survival and Reproduction Test-7 Day Survival

Start Date: 12/3/2014 16:30 Test ID: 14120313c Sample ID: Outfall 009
 End Date: 12/10/2014 16:15 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater
 Sample Date: 12/3/2014 10:44 Protocol: EPAFW02-821-R-02-013 Test Species: CD-Ceriodaphnia dubia

Comments:

Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	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

Conc-gm/L	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's 1-Tailed		Isotonic	
							Exact P	Critical	Mean	N-Mean
D-Control	1.0000	1.0000	0	10	10	10			1.0000	1.0000
100	1.0000	1.0000	0	10	10	10	1.0000	0.0500	1.0000	1.0000

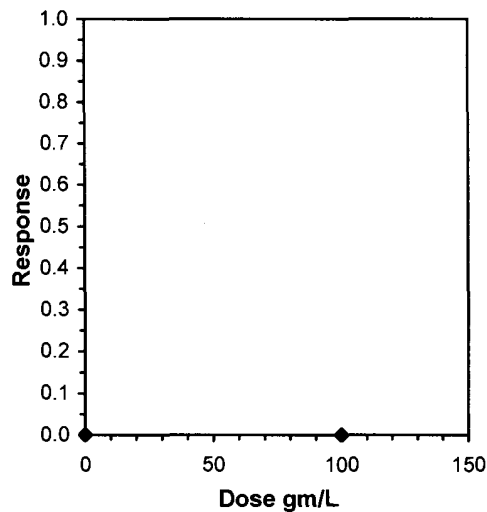
Hypothesis Test (1-tail, 0.05) **NOEC** **LOEC** **ChV** **TU**

Fisher's Exact Test 100 >100

Treatments vs D-Control

Linear Interpolation (200 Resamples)

Point	gm/L	SD	95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Ceriodaphnia Survival and Reproduction Test-Reproduction

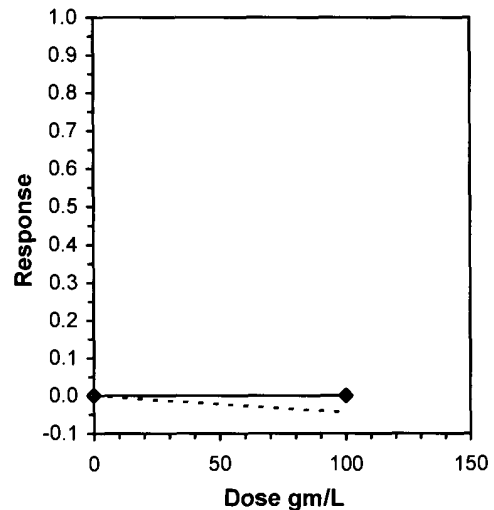
Start Date: 12/3/2014 16:30 Test ID: 14120313c Sample ID: Outfall 009
 End Date: 12/10/2014 16:15 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater
 Sample Date: 12/3/2014 10:44 Protocol: EPAFW02-821-R-02-013 Test Species: CD-Ceriodaphnia dubia
 Comments:

Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	27.000	25.000	26.000	31.000	28.000	25.000	26.000	26.000	28.000	30.000
100	29.000	24.000	25.000	30.000	30.000	30.000	29.000	29.000	29.000	29.000

Conc-gm/L	Mean	N-Mean	Transform: Untransformed				N	t-Stat	1-Tailed Critical	MSD	Isotonic	
			Mean	Min	Max	CV%					Mean	N-Mean
D-Control	27.200	1.0000	27.200	25.000	31.000	7.515	10				27.800	1.0000
100	28.400	1.0441	28.400	24.000	30.000	7.460	10	-1.289	1.734	1.614	27.800	1.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt		
Shapiro-Wilk's Test indicates normal distribution ($p > 0.05$)	0.95662	0.905	-0.4201	0.11547		
F-Test indicates equal variances ($p = 0.92$)	1.07447	6.54109				
Hypothesis Test (1-tail, 0.05)	MSDu	MSDp	MSB	MSE	F-Prob	df
Homoscedastic t Test indicates no significant differences Treatments vs D-Control	1.61433	0.05935	7.2	4.33333	0.21372	1, 18

Linear Interpolation (200 Resamples)				
Point	gm/L	SD	95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



CERIODAPHNIA DUBIA CHRONIC BIOASSAY
EPA METHOD 1002.0 Raw Data Sheet



Lab No.: A-14120313-001

Client ID: TestAmerica - Outfall 009

Start Date: 12/03/2014

	DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7		
	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	
Analyst Initials:	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Time of Readings:	1630	1600	1600	1600	1600	1600	1600	1600	1600	1630	1630	1605	1615	1615	
Control	DO	6.1	6.0	6.5	6.4	6.7	6.0	6.1	6.8	6.7	6.2	6.9	6.3	6.7	6.3
	pH	7.9	7.7	7.6	7.8	7.8	7.9	7.8	8.0	8.0	8.0	8.1	8.1	8.1	8.1
	Temp	25.0	25.0	25.1	25.0	25.0	25.1	25.0	25.1	24.9	24.7	24.7	24.6	24.8	25.0
100%	DO	6.5	6.2	7.7	7.8	6.2	6.0	6.1	7.7	6.3	6.4	6.4	6.0	6.1	6.1
	pH	7.4	7.5	7.8	7.9	7.8	7.8	7.9	8.0	8.1	8.1	8.0	8.1	7.8	8.1
	Temp	24.8	24.9	24.9	24.9	24.9	25.0	25.1	25.1	24.8	24.7	25.1	24.7	24.8	25.0

Additional Parameters	Control	100% Sample
Conductivity (umohms)	295	264
Alkalinity (mg/l CaCO ₃)	56	30
Hardness (mg/l CaCO ₃)	93	41
Ammonia (mg/l NH ₃ -N)	0.1	0.3

Source of Neonates											
Replicate:	A	B	C	D	E	F	G	H	I	J	
Brood ID:	5A	6A	4B	4D	5D	6E	5H	6H	6J	3C	

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
Control	1	0	0	0	0	0	0	0	0	0	0	0	10	[Handwritten initials]
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	4	3	5	4	3	4	0	5	4	32	10	
	4	3	7	9	8	8	7	8	5	0	9	64	10	
	5	6	0	14	18	16	0	0	0	6	0	60	10	
	6	0	0	0	0	0	0	0	6	0	17	23	10	
	7	18	14	(12)	(16)	(20)	15	14	15	17	0	93	10	
	Total	27	25	26	31	28	25	26	26	28	30	272	10	
100%	1	0	0	0	0	0	0	0	0	0	0	0	10	[Handwritten initials]
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	5	3	5	0	5	3	4	4	4	5	38	10	
	4	9	0	6	4	10	9	9	10	0	9	66	10	
	5	0	6	0	0	15	18	16	15	7	0	77	10	
	6	15	0	0	10	0	0	0	0	18	0	43	10	
	7	0	15	14	16	0	(15)	0	(16)	(19)	15	60	10	
	Total	29	24	25	30	30	30	29	29	29	29	284	10	

Circled fourth brood not used in statistical analysis.

7th day only used if <60% of the surviving control females have produced their third brood.

<p>Client Name/Address: Haley & Aldrich 9040 Friars Road Suite 220 San Diego, CA 92109-5860</p>		<p>Project: Boeing-SSFL NPDES Routine Outfall 009 COMPOSITE Stormwater at SW-13</p>		<p>ANALYSIS REQUIRED</p>																					
<p>Test America Contact: Debby Wilson</p>		<p>Project Manager: Nancy Gardiner 619.285.7132, 858.337.4061(cell) Field Manager: Jeff Bannon 818.350.7340, 818.414.5608(cell)</p>		<p>Phone Number: 619.285.7132, 858.337.4061(cell) Field Manager: Jeff Bannon 818.350.7340, 818.414.5608(cell)</p>		<p>Sample: <i>AD 12 GC, Pesticides</i></p>		<p>Sample I.D. Outfall 009_2014</p>		<p>Sampling Date/Time 12/03/14 1044</p>		<p>Preservative</p>		<p>Bottle #</p>		<p>Comments</p>									
<p>Sample Description</p>		<p>Sample Matrix</p>		<p>Container Type</p>		<p># of Cont</p>		<p>Sample I.D.</p>		<p>Sampling Date/Time</p>		<p>Preservative</p>		<p>Bottle #</p>		<p>Analysis</p>		<p>Comments</p>							
Outfall 009		W		1L Poly		1		Outfall 009_2014		12/03/14		None		2A		Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Tl		X							
Outfall 009		W		1L Amber		2		Outfall 009_2014		12/03/14		None		3A, 3B		Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl		X							
Outfall 009		W		500 mL Poly		2		Outfall 009_2014		12/03/14		None		4A, 4B		TSS		X							
Outfall 009		W		500 mL Poly		1		Outfall 009_2014		12/03/14		None		5		TDS		X							
Outfall 009		W		1L Poly		1		Outfall 009_2014		12/03/14		None		6		Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl		X							
Outfall 009		W		2.5 Gal Cube		1		Outfall 009_2014		12/03/14		None		7A		Chloride		X							
Outfall 009		W		500 mL Amber		1		Outfall 009_2014		12/03/14		None		7B		Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl		X							
Outfall 009		W		1 Gal Poly		1		Outfall 009_2014		12/03/14		None		8		Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl		X							
Outfall 009		W		500 mL Poly		1		Outfall 009_2014		12/03/14		NaOH		9		Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl		X							
Outfall 009		W		1L Poly		1		Outfall 009_2014		12/03/14		None		5		Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl		X							

COC Page 2 of 2 list the Composite Samples for Outfall 009 for this storm event. These must be added to the same work order for COC Page 1 of 2 for Outfall 009 for the same event.

<p>Relinquished By: <i>[Signature]</i> Date/Time: 12/3/14 14:55</p>	<p>Received By: <i>[Signature]</i> Date/Time: 12/3/14 14:05</p>	<p>Turn-around time (Check) 24 Hour: _____ 48 Hour: _____ 72 Hour: _____ 5 Day: _____ 10 Day: _____ Normal: <input checked="" type="checkbox"/></p>
<p>Relinquished By: <i>[Signature]</i> Date/Time: 12/3/14 16:30</p>	<p>Received By: <i>[Signature]</i> Date/Time: 12-3-14 16:30</p>	<p>Sample Integrity (Check) Intact: _____ On Ice: _____</p>
<p>Relinquished By: _____ Date/Time: _____</p>	<p>Received By: <i>[Signature]</i> Date/Time: _____</p>	<p>Date Requirements (Check) No Level IV: _____ All Level IV: _____ NPDES Level IV: _____</p>

TestAmerica Irvine
 17461 Deegan Ave Suite 100
 Irvine, CA 92614-5817
 Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)		Lab PM: Wilson, Debby S		Carrier Tracking No(s)	
Client Contact: Shipping/Receiving		E-Mail: debby.wilson@testamericainc.com		COC No: 440-69042.1	
Company: Aquatic Testing Laboratories		Address: 4950 Transport #107, City: Ventura State, Zip: CA, 93003		Page: Page 1 of 1	
Phone: Email:		PO #: WO #:		Job #: 440-94732-1	
Project Name: Routine outfall 009 Site		Project #: 44009879 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 Other:	
Due Date Requested: 12/15/2014		TAT Requested (days):		Analysis Requested	
Sample Information - Client ID (Lab ID)		Sample Date		Sample Time	
Outfall009_20141203_Comp (440-94934-1)		12/3/14		10:44 Pacific	
Sample Type (C=Comp, G=Grab)		Matrix (W=Water, S=Sediment, O=Organic, ST=Trace Analy)		Special Instructions/Note:	
C		Water		Total Number of Containers	
Field Filtered Sample (Yes or No)		Field Preservation Code		Special Instructions/Note:	
No		X			
Sub (Chrono Core, EPA821-R02-013)		Field Filtered Sample (Yes or No)		Special Instructions/Note:	
EPA821-R02-013		No			
Sub (Chrono Core, EPA821-R02-013) Chrono Core		Field Preservation Code		Special Instructions/Note:	
		X			
Possible Hazard Identification					
Unconfirmed					
Deliverable Requested: I, II, III, IV, Other (specify)					
Empty Kit Relinquished by:					
Date/Time:		Date/Time:		Date/Time:	
Company: TAI		Company:		Company:	
Relinquished by:					
Relinquished by:					
Relinquished by:					
Custody Seal Intact: Custody Seal No.:					
Δ Yes Δ No					
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)					
Return To Client		Disposal By Lab		Archive For	
<input type="checkbox"/>		<input type="checkbox"/>		Months	
Special Instructions/QC Requirements:					
Method of Shipment					
Received by:		Date/Time:		Company:	
- See		12/15/14		Company	
Received by:		Date/Time:		Company:	
Received by:		Date/Time:		Company:	
Cooler Temperature(s) °C and Other Remarks:					





REFERENCE TOXICANT DATA

1
2
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CERIODAPHNIA CHRONIC BIOASSAY
EPA METHOD 1002.0
REFERENCE TOXICANT - NaCl



QA/QC Batch No.: RT-141203

Date Tested: 12/03/14 to 12/10/14

TEST SUMMARY

Test type: Daily static-renewal.
 Species: *Ceriodaphnia dubia*.
 Age: <24 hrs; all released within 8 hrs.
 Test vessel size: 30 ml.
 Number of test organisms per vessel: 1.
 Temperature: 25 +/- 1°C.
 Dilution water: Mod. hard reconstituted (MHRW).
 Reference Toxicant: Sodium chloride (NaCl).

Endpoints: Survival and Reproduction.
 Source: In-laboratory culture.
 Food: .1 ml YTC, algae per day.
 Test solution volume: 20 ml.
 Number of replicates: 10.
 Photoperiod: 16/8 hrs. light/dark cycle.
 Test duration: 7 days.
 Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survival		Mean Number of Young Per Female	
Control	100%		26.9	
0.25 g/L	100%		28.1	
0.5 g/L	100%		27.0	
1.0 g/L	100%		18.0	*
2.0 g/L	90%		2.3	*
4.0 g/L	0%	*	0	**

* Statistically significantly less than control at P = 0.05 level
 ** Reproduction data from concentrations greater than survival NOEC are excluded from statistical analysis.

CHRONIC TOXICITY

Survival LC50	2.6 g/l
Reproduction IC25	0.85 g/l

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥ 80%	Pass (100% Survival)
≥ 15 young per surviving control female	Pass (26.9 young)
≥ 60% surviving controls had 3 broods	Pass (100% with 3 broods)
PMSD < 47% for reproduction	Pass (PMSD = 8.0%)
Stat. sig. diff. conc. relative difference > 13%	Pass (Stat. sig. diff. conc. Relative difference = 33.1%)
Concentration response relationship acceptable	Pass (Response curve normal)

Ceriodaphnia Survival and Reproduction Test-7 Day Survival

Start Date: 12/3/2014 14:00 Test ID: RT141203c Sample ID: REF-Ref Toxicant
 End Date: 12/10/2014 13:30 Lab ID: CAATL-Aquatic Testing Labs Sample Type: NACL-Sodium chloride
 Sample Date: 12/3/2014 Protocol: EPAFW02-821-R-02-013 Test Species: CD-Ceriodaphnia dubia

Comments:

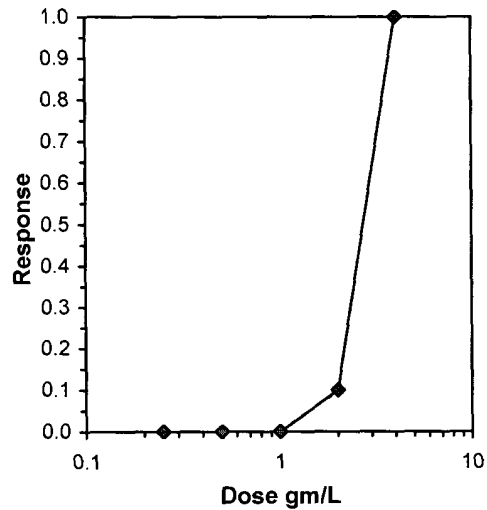
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Conc-gm/L	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical	Number Resp	Total Number
D-Control	1.0000	1.0000	0	10	10	10			0	10
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
1	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
2	0.9000	0.9000	1	9	10	10	0.5000	0.0500	1	10
4	0.0000	0.0000	10	0	10	10			10	10

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	2	4	2.82843	
Treatments vs D-Control				

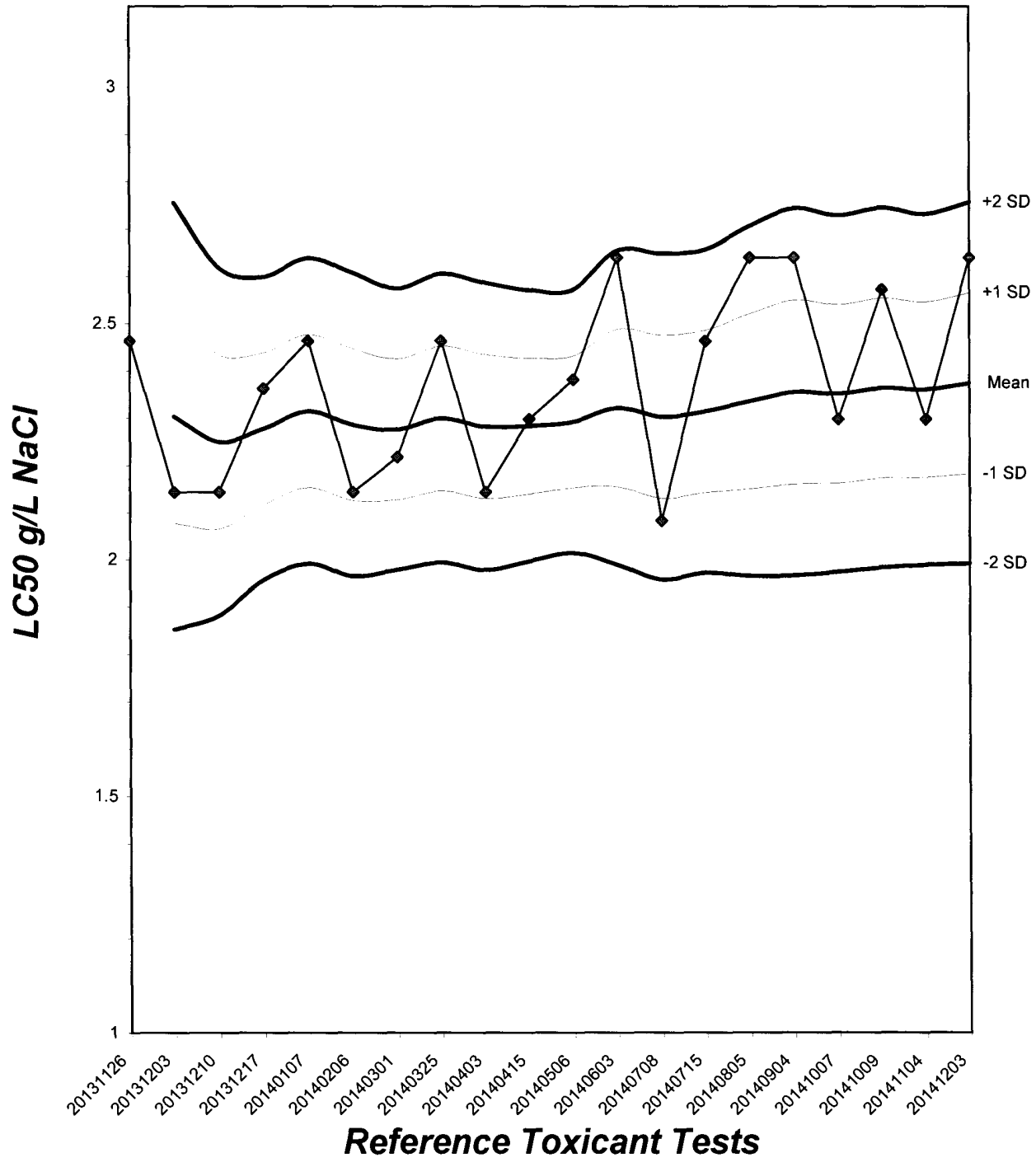
Trimmed Spearman-Kärber

Trim Level	EC50	95% CL	
0.0%	2.6390	2.3138	3.0099
5.0%	2.6984	2.2899	3.1798
10.0%	2.7216	2.5094	2.9517
20.0%	2.7216	2.5094	2.9517
Auto-0.0%	2.6390	2.3138	3.0099



Ceriodaphnia Chronic Survival Laboratory Control Chart

CV% = 8.03



- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Ceriodaphnia Survival and Reproduction Test-Reproduction

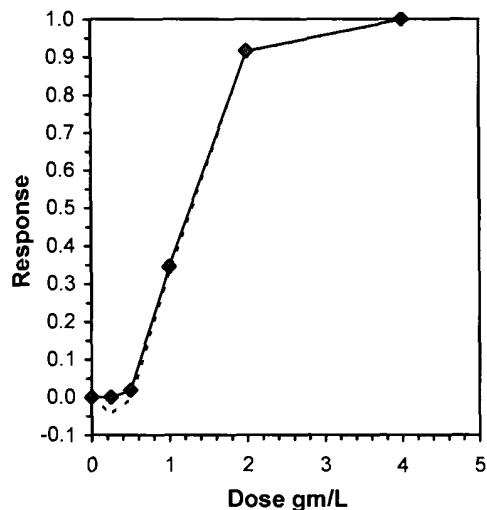
Start Date: 12/3/2014 14:00 Test ID: RT141203c Sample ID: REF-Ref Toxicant
 End Date: 12/10/2014 13:30 Lab ID: CAATL-Aquatic Testing Labs Sample Type: NAACL-Sodium chloride
 Sample Date: 12/3/2014 Protocol: EPAFW02-821-R-02-013 Test Species: CD-Ceriodaphnia dubia
 Comments:

Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	29.000	26.000	28.000	26.000	27.000	25.000	26.000	22.000	27.000	33.000
0.25	25.000	30.000	29.000	28.000	30.000	30.000	28.000	30.000	26.000	25.000
0.5	28.000	27.000	30.000	27.000	24.000	27.000	29.000	27.000	28.000	23.000
1	18.000	19.000	18.000	17.000	21.000	15.000	18.000	19.000	19.000	16.000
2	0.000	2.000	2.000	2.000	6.000	2.000	2.000	2.000	0.000	5.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Conc-gm/L	Transform: Untransformed							1-Tailed			Isotonic	
	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
D-Control	26.900	1.0000	26.900	22.000	33.000	10.580	10				27.500	1.0000
0.25	28.100	1.0446	28.100	25.000	30.000	7.399	10	-1.242	2.223	2.147	27.500	1.0000
0.5	27.000	1.0037	27.000	23.000	30.000	7.808	10	-0.104	2.223	2.147	27.000	0.9818
*1	18.000	0.6691	18.000	15.000	21.000	9.443	10	9.215	2.223	2.147	18.000	0.6545
*2	2.300	0.0855	2.300	0.000	6.000	82.111	10	25.469	2.223	2.147	2.300	0.0836
4	0.000	0.0000	0.000	0.000	0.000	0.000	10				0.000	0.0000

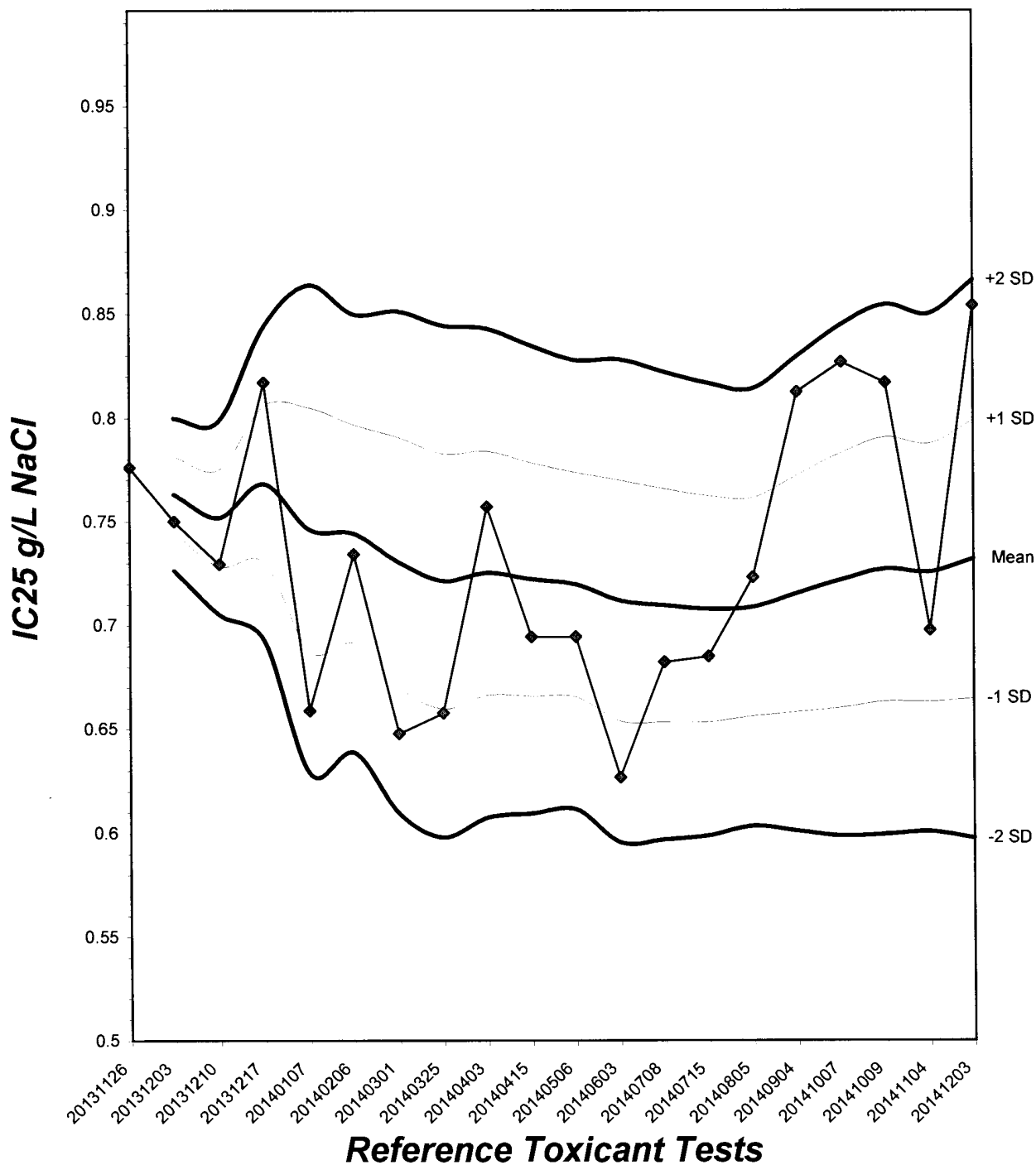
Auxiliary Tests	Statistic	Critical	Skew	Kurt						
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.97547	0.947	0.13437	0.79031						
Bartlett's Test indicates equal variances (p = 0.60)	2.75789	13.2767								
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test Treatments vs D-Control	0.5	1	0.70711		2.14743	0.07983	1196.13	4.66444	2.4E-30	4, 45

Linear Interpolation (200 Resamples)					
Point	gm/L	SD	95% CL		Skew
IC05	0.5486	0.0565	0.4009	0.5821	-3.1255
IC10	0.6250	0.0323	0.5424	0.6654	-0.9276
IC15	0.7014	0.0307	0.6298	0.7507	-0.6185
IC20	0.7778	0.0309	0.7171	0.8343	-0.2564
IC25	0.8542	0.0327	0.7943	0.9179	0.0400
IC40	1.0955	0.0399	1.0217	1.1692	-0.1435
IC50	1.2707	0.0342	1.2093	1.3340	-0.1116



Ceriodaphnia Chronic Reproduction Laboratory Control Chart

CV% = 9.16



CERIODAPHNIA DUBIA CHRONIC BIOASSAY
Reference Toxicant - NaCl
Reproduction and Survival Raw Data Sheet



QA/QC No.: RT-141203

Start Date:12/03/2014

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
Control	1	0	0	0	0	0	0	0	0	0	0	0	10	R
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	5	4	4	3	3	3	5	2	3	0	32	10	
	4	8	8	7	6	8	8	6	0	6	5	62	10	
	5	0	14	0	0	0	0	0	6	0	12	32	10	
	6	16	0	17	0	0	14	15	0	0	0	62	10	
	7	18	19	17	17	16	16	18	14	18	16	81	10	
	Total	29	26	28	26	27	25	26	22	27	33	269	10	
0.25 g/l	1	0	0	0	0	0	0	0	0	0	0	10	R	
	2	0	0	0	0	0	0	0	0	0	0	10		
	3	5	4	3	5	3	5	3	5	4	2	39		10
	4	8	10	9	7	9	8	7	9	8	9	84		10
	5	0	16	0	0	0	0	0	16	0	14	46		10
	6	12	0	17	16	18	17	18	0	14	0	112		10
	7	17	18	19	0	19	0	19	19	0	15	0		10
	Total	25	30	29	28	30	30	28	30	26	25	281		10
0.5 g/l	1	0	0	0	0	0	0	0	0	0	0	10	R	
	2	0	0	0	0	0	0	0	0	0	0	10		
	3	4	3	5	4	4	3	4	4	3	20	36		10
	4	8	9	10	9	8	8	10	7	8	7	84		10
	5	0	0	0	0	0	0	0	16	0	14	30		10
	6	16	15	15	14	12	16	15	0	17	0	120		10
	7	14	16	18	17	16	19	18	16	15	0	0		10
	Total	28	27	30	27	24	27	29	27	28	23	270		10

Circled fourth brood not used in statistical analysis.
 7th day only used if <60% of the surviving control females have produced their third brood.

CERIODAPHNIA DUBIA CHRONIC BIOASSAY
Reference Toxicant - NaCl
Reproduction and Survival Raw Data Sheet



QA/QC No.: RT-141203

Start Date: 12/03/2014

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
1.0 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	JK
	2	0	0	0	0	0	0	0	0	0	0	0	10	JK
	3	3	2	5	4	2	0	3	2	4	0	25	10	JK
	4	6	7	6	6	5	3	5	5	7	3	53	10	JK
	5	0	10	0	0	0	0	0	12	0	6	28	10	JK
	6	0	0	0	0	0	0	0	0	0	0	0	10	JK
	7	9	(16)	7	7	14	12	10	(6)	8	7	74	10	JK
	Total	18	19	18	17	21	15	18	19	19	16	180	10	JK
2.0 g/l	1	0	0	0	0	0	0	0	0	0	0	10	JK	
	2	0	0	0	0	0	0	0	0	0	0	10	JK	
	3	0	0	2	2	0	0	0	0	0	4	10	JK	
	4	0	0	0	0	0	0	0	2	0	2	4	10	JK
	5	0	0	0	0	0	0	0	0	0	3	3	10	JK
	6	0	0	0	0	2	2	0	0	0	0	4	10	JK
	7	X	2	0	0	4	0	2	0	0	0	8	9	JK
	Total	0	2	2	2	6	2	2	2	0	5	23	9	JK
4.0 g/l	1	X	X	X	X	X	X	X	X	X	0	0	JK	
	2	-	-	-	-	-	-	-	-	-	-	-	-	
	3	-	-	-	-	-	-	-	-	-	-	-	-	
	4	-	-	-	-	-	-	-	-	-	-	-	-	
	5	-	-	-	-	-	-	-	-	-	-	-	-	
	6	-	-	-	-	-	-	-	-	-	-	-	-	
	7	-	-	-	-	-	-	-	-	-	-	-	-	
	Total	0	0	0	0	0	0	0	0	0	0	0	0	JK

Circled fourth brood not used in statistical analysis.
 7th day only used if <60% of the surviving control females have produced their third brood.

CERIODAPHNIA DUBIA CHRONIC BIOASSAY

Reference Toxicant - NaCl Water Chemistries Raw Data Sheet



QA/QC No.: RT-141203

Start Date: 12/03/2014

		DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7	
		Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Analyst Initials:		Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Time of Readings:		1400	1400	1400	1400	1400	1400	1400	1400	1400	1330	1330	1330	1330	1330
Control	DO	8.1	8.0	8.3	7.9	8.1	8.0	8.1	8.0	8.2	8.2	8.6	8.1	8.2	8.0
	pH	7.9	7.9	7.8	8.1	8.0	8.0	8.1	8.1	8.1	8.1	8.1	8.0	8.0	8.1
	Temp	25.1	25.0	25.1	25.0	25.1	24.8	25.0	24.9	24.9	25.0	25.1	25.0	25.0	25.1
0.25 g/l	DO	8.2	8.0	8.2	7.9	8.0	8.0	8.1	8.0	8.1	8.2	8.7	8.0	8.2	8.1
	pH	7.8	7.9	7.8	8.0	7.9	8.0	7.9	8.0	8.0	8.1	8.1	8.0	7.8	8.1
	Temp	25.1	25.0	25.1	25.0	25.1	24.9	25.0	24.8	25.0	25.0	25.0	24.9	25.0	25.0
0.5 g/l	DO	8.2	8.1	8.3	7.9	8.2	8.0	8.0	8.0	8.2	8.7	8.3	7.9	8.0	8.0
	pH	7.9	7.9	7.8	8.0	7.9	7.9	8.0	8.1	8.1	8.1	8.0	8.0	7.7	8.0
	Temp	25.1	25.1	25.1	25.0	25.0	24.9	25.0	24.9	25.0	25.0	24.9	24.8	24.8	25.0
1.0 g/l	DO	8.3	8.1	7.8	8.0	8.1	7.6	7.8	7.8	8.0	8.2	8.0	8.2	8.4	8.1
	pH	7.9	7.9	7.9	8.0	7.9	7.9	8.0	8.1	8.0	8.0	8.1	8.0	7.9	8.1
	Temp	25.1	25.0	25.1	24.9	25.0	25.0	25.0	24.9	24.9	25.2	25.0	24.8	25.0	25.0
2.0 g/l	DO	8.4	8.1	8.3	8.0	8.1	7.7	8.1	7.9	8.3	8.0	8.4	8.1	7.8	8.0
	pH	7.9	7.8	7.8	7.8	8.0	8.1	8.0	8.1	8.0	8.0	8.1	8.1	7.8	8.1
	Temp	25.0	25.1	25.1	24.9	25.0	24.8	25.0	24.9	25.0	25.2	24.6	24.8	24.7	25.0
4.0 g/l	DO	8.4	7.8	8.4	-	-	-	-	-	-	-	-	-	-	-
	pH	7.9	7.8	7.8	-	-	-	-	-	-	-	-	-	-	-
	Temp	25.1	25.1	25.2	-	-	-	-	-	-	-	-	-	-	-

Dissolved Oxygen (DO) readings are in mg/l O₂; Temperature (Temp) readings are in °C.

Additional Parameters	Control			High Concentration		
	Day 1	Day 3	Day 5	Day 1	Day 3	Day 5
Conductivity (µS)	295	310	309	6541	3471	3349
Alkalinity (mg/l CaCO ₃)	56	56	55	56	56	56
Hardness (mg/l CaCO ₃)	93	92	92	92	92	92

Source of Neonates

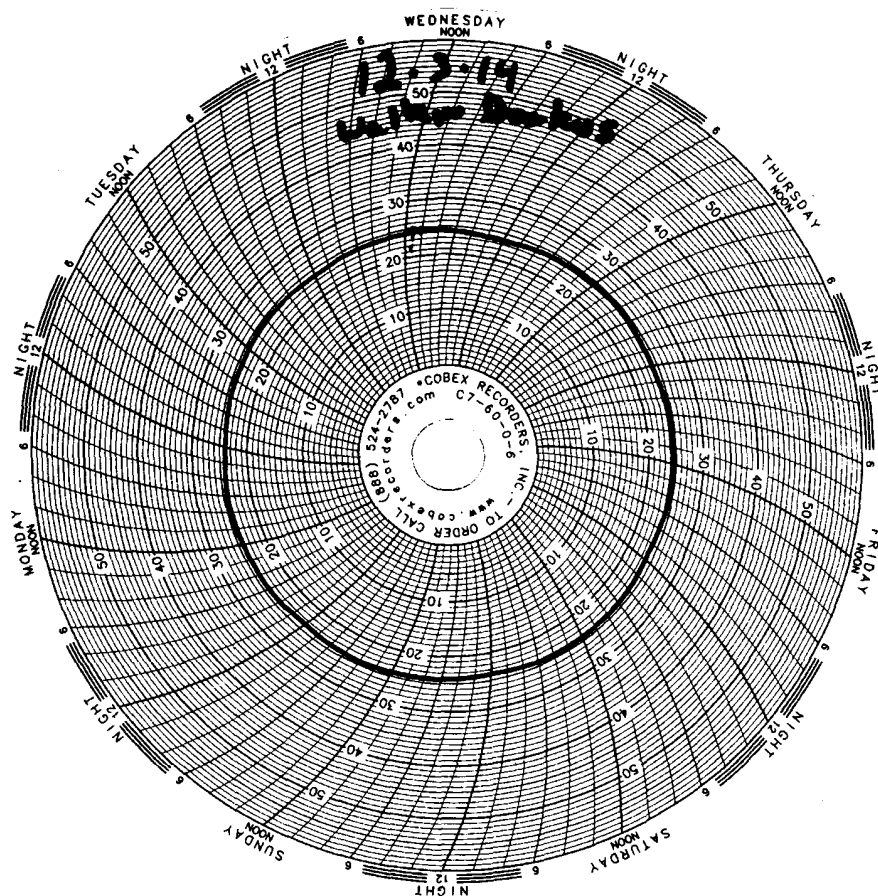
Replicate:	A	B	C	D	E	F	G	H	I	J
Brood ID:	1A	3A	2B	3B	1C	3C	1D	1E	3E	2G

Test Temperature Chart

Test No: RT-141203

Date Tested: 12/03/14 to 12/10/14

Acceptable Range: 25 +/- 1°C



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Sample Receipt Documentation 16

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 440-94934-1

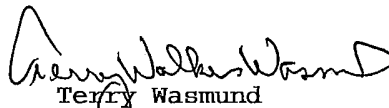
Routine Outfall 009 COMPOSITE

Lot #: H4L110416

Debby Wilson

TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817

TESTAMERICA LABORATORIES, INC.


Terry Wasmund
Project Manager

December 18, 2014

ANALYTICAL METHODS SUMMARY

H4L110416

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>
Dioxins/Furans, HRGC/HRMS	EPA-5 1613B

References:

EPA-5 "Method 1613: Tetra- through Octa- Chlorinated Dioxins and Furans by Isotope Dilution, HRGC/HRMS, Revision B", EPA, OCTOBER 1994

SAMPLE SUMMARY

H4L110416

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
M5PRA	001	OUTFALL009_20141203_COMP	12/03/14	10:44

NOTE (S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.



PROJECT NARRATIVE H4L110416

The results reported herein are applicable to the samples submitted for analysis only. If you have any questions about this report, please call (865) 291-3000 to speak with the TestAmerica project manager listed on the cover page.

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The original chain of custody documentation is included with this report.

Sample Receipt

There were no problems with the condition of the samples received.

Quality Control and Data Interpretation

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

The following flags are used to qualify results for chlorinated dioxin and furan results:

J – The reported result is an estimate. The amount reported is below the Minimum Level (ML). The qualitative definition of the ML is “the lowest level at which the analytical system must give a reliable signal and an acceptable calibration point”. The ML was introduced in EPA Methods 1624 and 1625 in 1980 and was promulgated in these methods in 1984 at 40 CFR Part 136, Appendix A. For the purposes of this report, the ML is qualitatively defined as described above, and quantitatively defined as follows:

Minimum Level: The concentration or mass of analyte in the sample that corresponds to the lowest calibration level in the initial calibration. It represents a concentration (in the sample extract) equivalent to that of the lowest calibration standard, after corrections for method-specified sample weights, volumes and cleanup procedures has been employed.

Example: The lowest calibration level for TCDD in the initial calibration is 0.5 pg/uL. A mass of 10 pg of 2,3,7,8-TCDD in the sample would result in a concentration of 0.5 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample extract corresponds to the concentration in the lowest calibration standard, the 10 pg mass in the sample components is the ML. If the sample extract is further diluted, the ML will increase by the dilution factor.

Example: A 1/10 dilution is performed on the sample extract described above. The ML for 2,3,7,8-TCDD becomes 100 pg rather than the default of 10 pg.

E – The reported result is an estimate. The amount reported is above the Upper Calibration Level (UCL) described below. The quantitative definition of the UCL is listed below:

Upper Calibration Level: The concentration or mass of analyte in the sample that corresponds to the highest calibration level in the initial calibration. It is equivalent to the

PROJECT NARRATIVE H4L110416

concentration of the highest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed.

Example: The maximum calibration level for TCDD in the initial calibration is 200 pg/uL. A mass of 4000 pg of 2,3,7,8-TCDD in the sampling components would result in a concentration of 200 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample extract corresponds to the concentration in the highest calibration standard, the 4000 pg mass in the sample components is the UCL. If the sample extract is further diluted, the ML will increase by the dilution factor.

Example: A 1/10 dilution is performed on the sample extract described above. The UCL for 2,3,7,8-TCDD becomes 40,000 pg rather than the default of 4000 pg. In this example, all positive 2,3,7,8-TCDD results above 40,000 pg are flagged with an E.

B – The analyte is present in the associated method blank at a detectable level. For this analysis, there is no method specified reporting level other than the qualitative criterion that peaks must exhibit a signal-to-noise ratio of ≥ 2.5 to 1. Therefore, the presence of any reportable amount of the analyte in the blank will result in a B qualifier on all associated samples.

Q – Estimated maximum possible concentration. This qualifier is used when the result is generated from chromatographic data that does not meet all the qualitative criteria for a positive identification given in the method. These criteria include the following:

- Ion abundance ratios must be within specified limits (+/-15% of theoretical ion abundance ratio).
- Retention time criteria (relative to the method-specified isotope labeled retention time standard).
- Co-maximization criterion. The two quantitation ion peaks must reach their maxima within 2 seconds of each other.
- Polychlorinated dibenzofuran purity. No peak can be identified as a polychlorinated dibenzofuran if a polychlorinated diphenyl ether peak maximizes within +/- 2 seconds of the furan candidate.

S – Ion suppression evident. The trace indicating the signal from the lock mass of the calibration compound shows a deflection at the retention time of the analyte. This may indicate a temporary suppression of the instrument sensitivity due to a matrix-borne interference.

C – Coeluting Isomer. The isomer is known to coelute with another member of its homologue group, or the peak shape is shouldered, indicating the likelihood of a coeluting isomer.

X – Other. See explanation in narrative.

Laboratory studies supporting risk assessment and Total Maximum Daily Load (TMDL) evaluations, frequently use qualified data reported as low as the Method Detection Limit (MDL), or the Estimated Detection Limit (EDL). Several of EPA's isotope dilution methods employ the EDL.^{1,2,3} The EDL is based on a direct measurement of the signal-to-noise (S/N) ratio acquired

PROJECT NARRATIVE H4L110416

during sample analysis. This S/N measurement is used to calculate the concentration in the sample corresponding to the minimum intensity of the smallest quantifiable peak. The EDL reflects the amount of the particular analyte which would be required to cause a positive result for the particular analysis. Because the S/N obtained covaries with recovery, instrument sensitivity and sample-specific cleanup efficacy, the EDL is a more valid measure of the sensitivity of the entire analytical process for the specific sample than is an MDL run periodically on a reference matrix.

The EDL is typically calculated according to the following equation:

$$\text{Estimated Detection Limit} = \frac{N \times 2.5 \times Q_{is}}{H_{is} \times RRF \times W \times S}$$

Where:

- N = peak to peak noise of quantitation ion signal in the region of the ion chromatogram where the compound of interest is expected to elute
- H_{is} = peak height of quantitation ion for appropriate internal standard
- Q_{is} = ng of internal standard added to sample
- RRF = mean relative response factor of compound obtained during initial calibration
- W = amount of sample extracted (grams or liters)
- S = percent solids (optional, if results are requested to be reported on dry weight basis)

(The area of the internal standard is sometimes used instead of height, along with an area-to-height conversion factor.)

This method of estimating the detection limit differs from the MDL in that it does not carry the requirement that the sample be statistically distinguished as being from a contaminated population. As results approach the EDL, the risk of false positives and the analytical uncertainty increase significantly. However, a low false positive well below the ML or MDL is often closer to the true value than an assumption that the target analyte is present at the detection or reporting limits. For relatively clean samples, MDL studies may give an elevated estimate of the detection limit. Additionally, on contaminated samples, the MDL may give a falsely low estimate of the detection limit.

$$\text{Analyte Concentration} = \frac{A_s \times Q_{is}}{A_{is} \times RRF \times W \times S}$$

Where:

- A_s = Sum of areas of the target peaks
- Q_{is} = ng of internal standard added to sample
- A_{is} = Sum of areas of the internal standard peaks
- RRF = mean relative response factor of compound obtained during initial calibration
- W = amount of sample extracted (grams or liters)
- S = percent solids (optional, if results are requested to be reported on dry weight basis)

PROJECT NARRATIVE H4L110416

In sample data, peaks must have an intensity of ≥ 2.5 times the height of the background noise in order to be considered. Careful examination of the two equations above reveals that for the concentration of the smallest peak detectable (per the EDL equation) to exactly equal the smallest peaks that are calculated, requires that the average height to area ratio obtained during the calibration must equal the area to height ratio for every peak obtained near 2.5 times the noise. When the area to height ratio on a peak in a sample is less than the average obtained during calibration, the calculated result will correspond to a peak that would have been less than 2.5 times the noise on the calibration. This is the result of normal variability. Because the source methods for the EDL (SW-846 8290 and 8280A) do not provide for censoring of results by any other magnitude standard than being 2.5 times the noise, the laboratory does not censor at the calculated EDL. Hence, detections may be reported below the estimated detection limits.

Footnotes:

1. Code of Federal Regulations, Part 136, Chapter 1, Appendix 1, October 1994: Method 1613 Tetra- Through Octa-Chlorinated Dioxins and Furans by Isotope Dilution High Resolution Gas Chromatography/High Resolution Mass Spectrometry.
2. U.S. EPA. Test Methods for Evaluating Solid Waste, Volume II, SW-846, Update III, December 1996. Method 8280A: The Analysis of Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by High Resolution Gas Chromatography/Low Resolution Mass Spectrometry.
3. U.S. EPA. Test Methods for Evaluating Solid Waste, SW-846. Third Edition. March 1995 Method 8290: Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by High Resolution Gas Chromatography/High Resolution Mass Spectrometry.

CERTIFICATION SUMMARY

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Knoxville	L-A-B	DoD ELAP		L2311
TestAmerica Knoxville	Arkansas DEQ	State Program	6	88-0688
TestAmerica Knoxville	California	State Program	9	2423
TestAmerica Knoxville	Colorado	State Program	8	N/A
TestAmerica Knoxville	Connecticut	State Program	1	PH-0223
TestAmerica Knoxville	Florida	NELAC	4	E87177
TestAmerica Knoxville	Georgia	State Program	4	906
TestAmerica Knoxville	Hawaii	State Program	9	N/A
TestAmerica Knoxville	Indiana	State Program	5	C-TN-02
TestAmerica Knoxville	Iowa	State Program	7	375
TestAmerica Knoxville	Kansas	NELAC	7	E-10349
TestAmerica Knoxville	Kentucky	State Program	4	90101
TestAmerica Knoxville	Louisiana DOHH	State Program	6	LA110001
TestAmerica Knoxville	Louisiana DEQ	NELAC	6	83979
TestAmerica Knoxville	Maryland	State Program	3	277
TestAmerica Knoxville	Michigan	State Program	5	9933
TestAmerica Knoxville	Minnesota	NELAC	5	047-999-429
TestAmerica Knoxville	Nevada	State Program	9	TN00009
TestAmerica Knoxville	New Jersey	NELAC	2	TN001
TestAmerica Knoxville	New York	NELAC	2	10781
TestAmerica Knoxville	North Carolina DENR	State Program	4	64
TestAmerica Knoxville	North Carolina DHHS	State Program	4	21705
TestAmerica Knoxville	Ohio	OVAP	5	CL0059
TestAmerica Knoxville	Oklahoma	State Program	6	9415
TestAmerica Knoxville	Pennsylvania	NELAC	3	68-00576
TestAmerica Knoxville	South Carolina	State Program	4	84001
TestAmerica Knoxville	Tennessee	State Program	4	2014
TestAmerica Knoxville	Texas	NELAC	6	T104704380-TX
TestAmerica Knoxville	Federal	USDA		P330-11-00035
TestAmerica Knoxville	Utah	NELAC	8	QUAN3
TestAmerica Knoxville	Virginia	NELAC	3	460176
TestAmerica Knoxville	Virginia	State Program	3	165
TestAmerica Knoxville	Washington	State Program	10	C593
TestAmerica Knoxville	West Virginia DEP	State Program	3	345
TestAmerica Knoxville	West Virginia DHHR	State Program	3	9955C

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Sample Data Summary

TestAmerica Irvine
Sample ID: OUTFALL009_20141203_COMP
Trace Level Organic Compounds

Lot - Sample #....:	H4L110416 - 001	Work Order #....:	M5PRA1AA	Matrix....:	WATER
Date Sampled....:	12/03/14	Date Received....:	12/11/14	Dilution Factor:	1
Prep Date....:	12/12/14	Analysis Date....:	12/17/14		
Prep Batch #:	4346015				
Initial Wgt/Vol :	1048 mL	Instrument ID....:	M2A	Method:	EPA-5 1613B
Analyst ID....:	Patricia(Trish) M. Parsly				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		0.0000954	0.0000450	ug/L
Total TCDD	ND		0.0000954	0.0000450	ug/L
1,2,3,7,8-PeCDD	ND		0.0000477	0.0000213	ug/L
Total PeCDD	ND		0.0000477	0.0000213	ug/L
1,2,3,4,7,8-HxCDD	ND		0.0000477	0.0000188	ug/L
1,2,3,6,7,8-HxCDD	ND		0.0000477	0.0000209	ug/L
1,2,3,7,8,9-HxCDD	ND		0.0000477	0.0000184	ug/L
Total HxCDD	ND		0.0000477	0.0000193	ug/L
1,2,3,4,6,7,8-HpCDD	0.000174	J	0.0000477	0.0000306	ug/L
Total HpCDD	0.000391	J	0.0000477	0.0000306	ug/L
OCDD	0.000133	B	0.0000954	0.0000359	ug/L
2,3,7,8-TCDF	ND		0.0000954	0.0000312	ug/L
Total TCDF	ND		0.0000954	0.0000312	ug/L
1,2,3,7,8-PeCDF	ND		0.0000477	0.0000150	ug/L
2,3,4,7,8-PeCDF	ND		0.0000477	0.0000138	ug/L
Total PeCDF	ND		0.0000477	0.0000144	ug/L
1,2,3,4,7,8-HxCDF	ND		0.0000477	0.0000114	ug/L
1,2,3,6,7,8-HxCDF	ND		0.0000477	0.0000110	ug/L
2,3,4,6,7,8-HxCDF	ND		0.0000477	0.0000112	ug/L
1,2,3,7,8,9-HxCDF	ND		0.0000477	0.0000151	ug/L
Total HxCDF	0.0000185	Q J	0.0000477	0.0000120	ug/L
1,2,3,4,6,7,8-HpCDF	0.0000513	Q J	0.0000477	0.0000218	ug/L
1,2,3,4,7,8,9-HpCDF	ND		0.0000477	0.0000311	ug/L
Total HpCDF	0.0000838	Q J	0.0000477	0.0000257	ug/L
OCDF	0.000135	B J	0.0000954	0.0000431	ug/L

TestAmerica Irvine
Sample ID: OUTFALL009_20141203_COMP
Trace Level Organic Compounds

Lot - Sample #....:	H4L110416 - 001	Work Order #....:	M5PRA1AA	Matrix....:	WATER
Date Sampled....:	12/03/14	Date Received....:	12/11/14	Dilution Factor:	1
Prep Date....:	12/12/14	Analysis Date....:	12/17/14		
Prep Batch #:	4346015				
Initial Wgt/Vol :	1048 mL	Instrument ID....:	M2A	Method:	EPA-5 1613B
Analyst ID....:	Patricia(Trish) M. Parsly				

<u>INTERNAL STANDARDS</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
13C-2,3,7,8-TCDD	91	25 - 164
13C-1,2,3,7,8-PeCDD	94	25 - 181
13C-1,2,3,4,7,8-HxCDD	80	32 - 141
13C-1,2,3,6,7,8-HxCDD	77	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	64	23 - 140
13C-OCDD	57	17 - 157
13C-2,3,7,8-TCDF	86	24 - 169
13C-1,2,3,7,8-PeCDF	86	24 - 185
13C-2,3,4,7,8-PeCDF	85	21 - 178
13C-1,2,3,4,7,8-HxCDF	73	26 - 152
13C-1,2,3,6,7,8-HxCDF	73	26 - 123
13C-2,3,4,6,7,8-HxCDF	78	28 - 136
13C-1,2,3,7,8,9-HxCDF	73	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	65	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	60	26 - 138
13C-OCDF	50	17 - 157

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
37Cl4-2,3,7,8-TCDD	106	35 - 197

QUALIFIERS

- B Method blank contamination. The associated method blank contains the target analyte at a reportable level.
- J Estimated Result.
- Q Estimated maximum possible concentration (EMPC).

Method Blank Report
Trace Level Organic Compounds

Lot - Sample #....: H4L120000 - 015B Work Order #....: M5P4V1AA Matrix....: WATER
 Dilution Factor: 1
 Prep Date....: 12/12/14 Analysis Date....: 12/17/14
 Prep Batch #: 4346015
 Initial Wgt/Vol : 1000 mL Instrument ID....: M2A Method: EPA-5 1613B
 Analyst ID....: Patricia(Trish) M. Parsly

PARAMETER	RESULT	MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND	0.0000100	0.00000710	ug/L
Total TCDD	ND	0.0000100	0.00000710	ug/L
1,2,3,7,8-PeCDD	ND	0.0000500	0.00000310	ug/L
Total PeCDD	ND	0.0000500	0.00000310	ug/L
1,2,3,4,7,8-HxCDD	ND	0.0000500	0.00000256	ug/L
1,2,3,6,7,8-HxCDD	ND	0.0000500	0.00000298	ug/L
1,2,3,7,8,9-HxCDD	ND	0.0000500	0.00000256	ug/L
Total HxCDD	ND	0.0000500	0.00000269	ug/L
1,2,3,4,6,7,8-HpCDD	ND	0.0000500	0.00000336	ug/L
Total HpCDD	ND	0.0000500	0.00000336	ug/L
OCDD	0.00000656 Q J	0.000100	0.00000360	ug/L
2,3,7,8-TCDF	ND	0.0000100	0.00000469	ug/L
Total TCDF	ND	0.0000100	0.00000469	ug/L
1,2,3,7,8-PeCDF	ND	0.0000500	0.00000204	ug/L
2,3,4,7,8-PeCDF	ND	0.0000500	0.00000194	ug/L
Total PeCDF	ND	0.0000500	0.00000199	ug/L
1,2,3,4,7,8-HxCDF	ND	0.0000500	0.00000143	ug/L
1,2,3,6,7,8-HxCDF	ND	0.0000500	0.00000135	ug/L
2,3,4,6,7,8-HxCDF	ND	0.0000500	0.00000137	ug/L
1,2,3,7,8,9-HxCDF	ND	0.0000500	0.00000166	ug/L
Total HxCDF	ND	0.0000500	0.00000144	ug/L
1,2,3,4,6,7,8-HpCDF	ND	0.0000500	0.00000271	ug/L
1,2,3,4,7,8,9-HpCDF	ND	0.0000500	0.00000340	ug/L
Total HpCDF	ND	0.0000500	0.00000302	ug/L
OCDF	0.00000630 Q J	0.000100	0.00000392	ug/L

Method Blank Report
Trace Level Organic Compounds

Lot - Sample #....: H4L120000 - 015B
 Dilution Factor: 1
 Prep Date....: 12/12/14
 Prep Batch #: 4346015
 Initial Wgt/Vol : 1000 mL
 Analyst ID....: Patricia(Trish) M. Parsly

Work Order #....: M5P4V1AA Matrix....: WATER
 Analysis Date....: 12/17/14
 Instrument ID....: M2A Method: EPA-5 1613B

<u>INTERNAL STANDARDS</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
13C-2,3,7,8-TCDD	94	25 - 164
13C-1,2,3,7,8-PeCDD	101	25 - 181
13C-1,2,3,4,7,8-HxCDD	84	32 - 141
13C-1,2,3,6,7,8-HxCDD	75	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	73	23 - 140
13C-OCDD	71	17 - 157
13C-2,3,7,8-TCDF	87	24 - 169
13C-1,2,3,7,8-PeCDF	92	24 - 185
13C-2,3,4,7,8-PeCDF	93	21 - 178
13C-1,2,3,4,7,8-HxCDF	72	26 - 152
13C-1,2,3,6,7,8-HxCDF	71	26 - 123
13C-2,3,4,6,7,8-HxCDF	76	28 - 136
13C-1,2,3,7,8,9-HxCDF	76	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	70	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	70	26 - 138
13C-OCDF	63	17 - 157

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
37Cl4-2,3,7,8-TCDD	116	35 - 197

QUALIFIERS

- J Estimated Result.
 Q Estimated maximum possible concentration (EMPC).

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot # ...: H4L110416 Work Order # ...: M5P4V1AC-LCS Matrix: WATER
 LCS Lot-Sample# : H4L120000 - 015
 Prep Date: 12/12/14 Analysis Date ..: 12/17/14
 Prep Batch # ...: 4346015
 Dilution Factor : 1
 Analyst ID.....: Patricia(Trish) M. Parsl Instrument ID..: M2A Method.....: EPA-5 1613B
 Initial Wgt/Vol: 1000 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RECOVERY LIMITS
2,3,7,8-TCDD	0.0002	0.0002	ug/L	108	(67 - 158)
1,2,3,7,8-PeCDD	0.0010	0.0010	ug/L	101	(70 - 142)
1,2,3,4,7,8-HxCDD	0.0010	0.0009	ug/L	95	(70 - 164)
1,2,3,6,7,8-HxCDD	0.0010	0.0009	ug/L	94	(76 - 134)
1,2,3,7,8,9-HxCDD	0.0010	0.0010	ug/L	105	(64 - 162)
1,2,3,4,6,7,8-HpCDD	0.0010	0.0009	ug/L	95	(70 - 140)
OCDD	0.0020	0.0017	ug/L	88 B	(78 - 144)
2,3,7,8-TCDF	0.0002	0.0002	ug/L	105	(75 - 158)
1,2,3,7,8-PeCDF	0.0010	0.0009	ug/L	93	(80 - 134)
2,3,4,7,8-PeCDF	0.0010	0.0009	ug/L	98	(68 - 160)
1,2,3,4,7,8-HxCDF	0.0010	0.0009	ug/L	96	(72 - 134)
1,2,3,6,7,8-HxCDF	0.0010	0.0009	ug/L	95	(84 - 130)
2,3,4,6,7,8-HxCDF	0.0010	0.0009	ug/L	95	(70 - 156)
1,2,3,7,8,9-HxCDF	0.0010	0.0009	ug/L	97	(78 - 130)
1,2,3,4,6,7,8-HpCDF	0.0010	0.0009	ug/L	93	(82 - 122)
1,2,3,4,7,8,9-HpCDF	0.0010	0.0009	ug/L	95	(78 - 138)
OCDF	0.0020	0.0018	ug/L	93 B	(63 - 170)

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	83	(20 - 175)
13C-1,2,3,7,8-PeCDD	103	(21 - 227)
13C-1,2,3,4,7,8-HxCDD	89	(21 - 193)
13C-1,2,3,6,7,8-HxCDD	81	(25 - 163)
13C-1,2,3,4,6,7,8-HpCDD	86	(26 - 166)
13C-OCDD	90	(13 - 199)
13C-2,3,7,8-TCDF	80	(22 - 152)
13C-1,2,3,7,8-PeCDF	89	(21 - 192)
13C-2,3,4,7,8-PeCDF	87	(13 - 328)
13C-1,2,3,4,7,8-HxCDF	78	(19 - 202)
13C-1,2,3,6,7,8-HxCDF	78	(21 - 159)
13C-2,3,4,6,7,8-HxCDF	83	(22 - 176)
13C-1,2,3,7,8,9-HxCDF	80	(17 - 205)
13C-1,2,3,4,6,7,8-HpCDF	80	(21 - 158)
13C-1,2,3,4,7,8,9-HpCDF	81	(20 - 186)
13C-OCDF	80	(13 - 199)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	114	(31 - 191)

LABORATORY CONTROL SAMPLE DATA REPORT
Trace Level Organic Compounds

Notes:

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Sample Receipt Documentation

441-10416

TestAmerica Irvine
17461 Derian Ave Suite 100
Irvine, CA 92614-5817
Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record



THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab) Company: TestAmerica Laboratories, Inc. Address: 880 Riverside Parkway, City: West Sacramento State, Zip: CA, 95605 Phone: 916-373-5600(Tel) 916-372-1059(Fax) Email: Project Name: Routine Outfall 009 COMPOSITE Site:		Lab PM: Wilson, Debby S E-Mail: debby.wilson@testamericainc.com Camer Tracking No(s): COC No: 440-68236.1 Page: Page 1 of 1 Job #: 440-94934-1		
Due Date Requested: 12/19/2014 TAT Requested (days):	Sample Date: 12/3/14	Sample Time: 10:44 Pacific	Sample Type (C=Comp, G=grab) Preservation Code:	Matrix (W=water, S=solid, O=soil, B=BI-Tissue, A=Air)
Analysis Requested Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> X Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> X 1613B/1613B_Sox_Sep_P Standard List w/ Totals <input checked="" type="checkbox"/> X				
Total Number of Containers: 2 Special Instructions/Note: See QAS, Boeing_w/h to zero, ug/L				
Preservation Codes: M - Hexane N - None O - AshNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2SO3 S - H2SO4 G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:				
Possible Hazard Identification Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify)				
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months				
Special Instructions/QC Requirements:				
Empty Kit Relinquished by: _____ Date: _____				
Relinquished by: <i>VuBank</i> Date: 12/4/14 17:00 Company: TAT				
Relinquished by: _____ Date: _____ Company:				
Relinquished by: _____ Date: 12-10-14 1600 Company:				
Custody Seals Intact: _____ Seal No: _____ A - Yes A - No				

TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Lot Number: 441-110416

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Do sample container labels match COC? (IDs, Dates, Times)	<input checked="" type="checkbox"/>			<input type="checkbox"/> 1a Do not match COC <input type="checkbox"/> 1b Incomplete information <input type="checkbox"/> 1c Marking smeared <input type="checkbox"/> 1d Label torn <input type="checkbox"/> 1e No label <input type="checkbox"/> 1f COC not received <input type="checkbox"/> 1g Other: _____	
2. Is the cooler temperature within limits? (> freezing temp. of water to 6°C, VOST: 10°C) Thermometer ID: <u>5C57</u> Correction factor: <u>-0.1</u>	<input checked="" type="checkbox"/>			<input type="checkbox"/> 2a Temp Blank = _____ <input type="checkbox"/> 2b Cooler Temp = _____ <input type="checkbox"/> 2c Cooling initiated for recently collected samples, ice present. <input type="checkbox"/> 3a See box 3A for pH Preservation <input type="checkbox"/> 3b Other: _____	
3. Were samples received with correct chemical preservative (excluding Encore)?	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/> 4a Not present <input type="checkbox"/> 4b Not intact <input type="checkbox"/> 4c Other: _____	
4. Were custody seals present/intact on cooler and/or containers?	<input checked="" type="checkbox"/>			<input type="checkbox"/> 5a Samples received-not on COC <input type="checkbox"/> 5b Samples not received-on COC <input type="checkbox"/> 6a Leaking <input type="checkbox"/> 6b Broken <input type="checkbox"/> 7a Headspace (VOA only) <input type="checkbox"/> 8a Improper container	
5. Were all of the samples listed on the COC received?	<input checked="" type="checkbox"/>			<input type="checkbox"/> 9a Could not be determined due to matrix interference <input type="checkbox"/> 10a Holding time expired <input type="checkbox"/> Incomplete information	
6. Were all of the sample containers received intact?	<input checked="" type="checkbox"/>			If no, was pH adjusted to pH 7 - 9 with sulfuric acid? _____	pH test strip lot number: <u>HC416869</u>
7. Were VOA samples received without headspace?	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/> 13a Leaking <input type="checkbox"/> 13b Other: _____	Box 3A: pH Preservation
8. Were samples received in appropriate containers?	<input checked="" type="checkbox"/>			<input type="checkbox"/> 14a Not relinquished <input type="checkbox"/> 15a Incomplete information	Box 9A: Residual Chlorine
9. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number: <u>4252 2017/07</u>	<input checked="" type="checkbox"/>			<input type="checkbox"/> 15a Incomplete information <input type="checkbox"/> 15a Incomplete information <input type="checkbox"/> 15a Incomplete information	Preservative: _____ Lot Number: _____ Exp Date: _____ Analyst: _____ Date: _____ Time: _____
10. Were samples received within holding time?	<input checked="" type="checkbox"/>			<input type="checkbox"/> 19a Other	
11. For rad samples, was sample activity info. provided?	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
12. For 1613B water samples is pH<9?	<input checked="" type="checkbox"/>				
13. Are the shipping containers intact?	<input checked="" type="checkbox"/>				
14. Was COC relinquished? (Signed/Dated/Timed)	<input checked="" type="checkbox"/>				
15. Are tests/parameters listed for each sample?	<input checked="" type="checkbox"/>				
16. Is the matrix of the samples noted?	<input checked="" type="checkbox"/>				
17. Is the date/time of sample collection noted?	<input checked="" type="checkbox"/>				
18. Is the client and project name/# identified?	<input checked="" type="checkbox"/>				
19. Was the sampler identified on the COC?	<input checked="" type="checkbox"/>				

Quote #: _____ PM Instructions: _____

Sample Receiving Associate: Ryan Henry Date: 12/11/14



- 1
- 2
- 3
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- 13
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Project:
Boeing-SFRL NPDES
Roudine Quail 009
GRAB
Stormwater at SW-13

Phone Number:
619.265.7132, 659.537.4061 (cell)
Field Manager: Jeff Barron
619.260.7340,
618.414.5608 (cell)

Sample ID	Sampling Date/Time	Parameter	Grade #	ANALYSIS REQUIRED	Field Readings (Include units)	Meter serial #
12-2-14	18:15	HCl	1A, 1B	X Oil & Grease (1664-HEM)	Time of readings: 1320 pH: C. 6.9 Temp: 13.130 pH unit WYR7R59L	
114	1400					
12-2-14	18:15					

These Samples are the Grab Portion of Odegal 009 for this storm event. Composite samples will follow and are to be added to this work order.



Received by: *Teas Dunn*
Date/Time: *02-2-14 14:00*

Received by: *Expain f...*
Date/Time: *02-2-14 18:15*

sample ID to Duffell009_20141202_Grab
ZF
12/11/14

3.4/2.8
4.0/3.2
3.2/3.4
JK 93

ZF
12/10/14

CHAIN OF CUSTODY FORM

RB
12/2/14

Client Name/Address: Haley & Aldrich 9040 Friars Road Suite 220 San Diego, CA 92108-5890		Project: Boeing-SSFL NPDES Routine Outfall 009 GRAB Stormwater at SW-13		Field Readings Time of readings: <u>1320</u> pH: <u>6.64</u> pH unit Temp: <u>13.13</u> °F Field readings QC Checked by: <u>[Signature]</u> Date/Time: <u>12/2/14 1335</u>		Meter serial #	
Test America Contact: Debby Wilson		Project Manager: Nancy Gardiner		Oil & Grease (1664-HEM)		ANALYSIS REQUIRED	
Project Number: 619.285.7132, 858.337.4061 (cell) Field Manager: Jeff Bannon 818.350.7340, 818.414.5608 (cell)		Phone Number:		Bottle #		Comments	
Sampler: <u>RB/BB</u>		Sampling Date/Time <u>12/2/14/1335</u>		Preservative HCl		Barcode 440-94732 Chain of Custody	
Sample Description Outfall 009		Sample I.D. Outfall 009_2014		Grab		Date/Time:	
Sample Matrix W		Container Type 1L Amber		# of Cont. 2		Date/Time:	
Relinquished By <u>ROY BARRAJAS</u>		Date/Time: <u>12/2/14 1400</u>		Received By <u>Tess Dunn</u>		Date/Time: <u>12-2-14 1815</u>	
Relinquished By <u>Tess Dunn</u>		Date/Time: <u>12-2-14 1815</u>		Received By <u>[Signature]</u>		Date/Time: <u>12/2/14 1814</u>	
Relinquished By		Date/Time:		Received By		Date/Time:	

These Samples are the Grab Portion of Outfall 009 for this storm event. Composite samples will follow and are to be added to this work order.

3.4/2.0
4.0/3.7
3.7/3.4





440-94934 Chain of Custody

Client Name/Address: Haley & Aldrich 9040 Friars Road Suite 220 San Diego, CA 92108-5860		Project: Boeing-SSEL NPDES Routine Outfall 009 COMPOSITE Stormwater at SW-13															
Test America Contact: Debby Wilson		Phone Number: 619.285.7132, 659.337.4061 (cell) Field Manager: Jeff Barmon 818.350.7340, 818.414.5808 (cell)															
Project Manager: Nancy Gardiner		Sampler: <i>Nancy Gardiner</i>															
Sample Description	Sample Matrix	Container Type	# of Cont.	Sample ID	Sampling Date/Time	Preservative	Bottle #	Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Ti	TSS	TDS	CF, SO ₄ , NO ₃ +NO ₂ -N	Total Prescribed Metals: Sb, Cd, Cu, Pb, Hg, Ti	Gross Alpha (900.0), Gross Beta (900.0), Tritium (1-3) (906.0), Sr-90 (905.0), Total Combined Radium 226 (903.0 or 903.1) & Radium 228 (904.0), Uranium (908.0), X-40, Cs-137 (901.0 or 901.1)	Chronic Toxicity	Cyanide	Comments	
Outfall 008	W	1L Poly	1		12/03/14	None	2A	X									
Outfall 008	W	1L Amber	2		12/03/14	None	3A, 3B	X									
Outfall 008	W	500 mL Poly	2		12/03/14	None	4A, 4B	X									
Outfall 008	W	500 mL Poly	1		12/03/14	None	5	X									
Outfall 008	W	1L Poly	1		12/03/14	None	6	X									
Outfall 008	W	2.5 Gal. Cube	1	Outfall 008_2014	Comp	None	7A						X				
Outfall 008	W	500 mL Amber	1		12/03/14	None	7B										
Outfall 008	W	1 Gal. Poly	1		12/03/14	None	8										
Outfall 009	W	500 mL Poly	1		12/03/14	NaOH	9		X								
Outfall 009	W	1L Poly	1		12/03/14	None	5										
COC Page 2 of 2 list the Composite Samples for Outfall 009 for this storm event. These must be added to the same work order for COC Page 1 of 2 for Outfall 009 for the same event.																	
Requisitioned By: <i>John D. Wilson</i> Date/Time: 12/03/14 14:55						Received By: <i>Latif</i> Date/Time: 12/13/14 14:05						Turn-around time: (Check) 10 Day: <input type="checkbox"/> Normal: <input checked="" type="checkbox"/> 24 Hour: <input type="checkbox"/> 72 Hour: <input type="checkbox"/> 48 Hour: <input type="checkbox"/> 5 Day: <input type="checkbox"/>					
Requisitioned By: <i>Latif</i> Date/Time: 12/03/14 21:00						Received By: <i>MAL</i> Date/Time: 12/03/14 21:00						Sample Integrity (Check) Impact: <input checked="" type="checkbox"/> On Ice: <input type="checkbox"/> Data Requirements (Check) No Level IV: <input type="checkbox"/> All Level IV: <input type="checkbox"/>					
Requisitioned By:						Received By:						Data Requirements (Check) No Level IV: <input type="checkbox"/> All Level IV: <input type="checkbox"/>					

