

APPENDIX G

Section 51

Outfall 018 – February 26 & 27, 2011

MEC^X Data Validation Report



DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: IUB2819

Prepared by

MECX, LP
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title: Boeing SSFL NPDES
 Contract Task Order: 1261.100D.00
 Sample Delivery Group: IUB2819
 Project Manager: B. Kelly
 Matrix: Water
 QC Level: IV
 No. of Samples: 1
 No. of Reanalyses/Dilutions: 0
 Laboratory: TestAmerica-Irvine

Table 1. Sample Identification

Client ID	Laboratory ID	Sub-Laboratory ID	Matrix	Collected	Method
Outfall 018	IUB2819-01	N/A	Water	2/26/2011 08:50	SM2540F
Outfall 018	IUB2819-03	G1C010481-001, S103017-01	Water	2/27/11 08:38	200.7, 200.7 (diss), 245.1, 245.1 (diss), 1613B, SM2130B, SM2510B, 900.0 MOD, 901.1 MOD, 903.0 MOD, 904 MOD, 905 MOD, 906.0 MOD, ASTM 5174

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at Eberline above the temperature limit; however, due to the nonvolatile nature of the analytes, no qualifications were required. The samples in this SDG were received at the remaining laboratory within the temperature limits of 4°C ±2°C. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. Custody seals were intact upon receipt at Eberline and TestAmerica-West Sacramento. As the sample was couriered to TestAmerica-Irvine, no custody seals were required. If necessary, the client ID was added to the sample result summary by the reviewer.

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.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
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.	Not applicable.
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.

Qualification Code Reference Table Cont.

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 1613—Dioxin/Furans

Reviewed By: L. Calvin

Date Reviewed: April 7, 2011

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 1613*, and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review (8/02)*.

- 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 1613 QC limits for all standards.
 - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits.
- Blanks: The method blank had a detect below the EDL for OCDD; however, the method blank concentration was insufficient to qualify the associated sample result for OCDD.

- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613, and RPDs were within the laboratory control limit of $\leq 50\%$.
- 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.
- Internal Standards Performance: The labeled standard recoveries in the sample were within the acceptance criteria listed in Table 7 of Method 1613.
- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613.
- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating a representative number of reportable sample results. Any detects reported between the estimated detection limit (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.

B. EPA METHOD 200.7 and 245.1—Metals and Mercury

Reviewed By: P. Meeks

Date Reviewed: April 7, 2011

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*, and the *National Functional Guidelines for Inorganic Data Review (7/02)*.

- Holding Times: The analytical holding times, six months for ICP metals and 28 days for mercury, were met.
- Tuning: Not applicable to these analyses.
- Calibration: Calibration criteria were met. The mercury initial calibration r^2 value was ≥ 0.995 . All initial and continuing calibration recoveries were within 90-110% and the CRDL recoveries were within the control limits of 70-130%.
- Blanks: Method blanks and CCBs had no applicable detects.

- Interference Check Samples: Recoveries were within 80-120%.
- Blank Spikes and Laboratory Control Samples: Recoveries and the zinc RPD were within laboratory-established QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.
- Serial Dilution: No serial dilution analyses were performed on the sample in this SDG.
- Internal Standards Performance: Not applicable to these analyses.
- 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.

The original total and dissolved zinc results were 7.3 and 24 µg/L, respectively. Due to the discrepancy in the results, the laboratory digested new aliquots from the original sample containers and obtained somewhat similar results for total and dissolved zinc, 6.4 and 11 µg/L, respectively. As the reanalyses were less disparate, the laboratory reported the second set of results. The reviewer was unable to determine if the total and dissolved sample containers were misidentified in the field or during the laboratory log-in process; therefore, both results were qualified as estimated, “J.”

- 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: April 7, 2011

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*, *ASTM Method D-5174*, and the *National Functional Guidelines for Inorganic Data Review (10/04)*.

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

The gross alpha detector efficiency was less than 20%; therefore, the nondetected result for gross alpha in the sample was qualified as estimated, "UJ." All remaining detector efficiencies were acceptable.

The tritium aliquot was spiked for efficiency determination; therefore, no calibration was necessary. All chemical yields were at least 40% and were considered acceptable. The gamma spectroscopy analytes were determined at the maximum photopeak energy. The kinetic phosphorescence analyzer (KPA) was calibrated immediately prior to the sample analysis.

- **Blanks:** There were no analytes detected in the method blanks.
- **Blank Spikes and Laboratory Control Samples:** The strontium recovery was nominally above the control limit; however, strontium was not detected in the sample. The remaining recoveries were within laboratory-established control limits.
- **Laboratory Duplicates:** No laboratory duplicate analyses were performed on the sample in this SDG.
- **Matrix Spike/Matrix Spike Duplicate:** No MS/MSD analyses were performed for the sample in this SDG. Method accuracy 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 MDAs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Any detects between the MDA 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 MDA. Total uranium, normally reported in aqueous units, was converted to pCi/L using the conversion factor of 0.67 for naturally occurring uranium.

A notation in the preparation logs indicated that a portion of the aliquots for this sample were filtered and that the filtrate was dissolved and added to the sample aliquot.

- 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. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks

Date Reviewed: April 7, 2011

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^x Data Validation Procedure for General Minerals (DVP-6, Rev. 0)*, *Standard Method SM2310B and SM2510B*, and the *National Functional Guidelines for Inorganic Data Review (7/02)*.

- Holding Times: The analytical holding times were met.
- Calibration: The initial calibration r² values were ≥ 0.995 and the ICV and CCV recoveries were within 90-110%.
- Blanks: The method blanks had no detects.
- Blank Spikes and Laboratory Control Samples: The recoveries were within laboratory-established QC limits.
- Laboratory Duplicates: No laboratory duplicate analysis was performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample in this SDG. Method accuracy was evaluated based on 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. 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 IUB2819

Analysis Method 900

Sample Name Outfall 018 (Composite) **Matrix Type:** WATER **Validation Level:** IV
Lab Sample Name: IUB2819-03 **Sample Date:** 2/27/2011 8:38:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Alpha	12587461	0.345	3	0.516	pCi/L	U	UJ	C
Gross Beta	12587472	3.1	4	1.02	pCi/L	Jb	J	DNQ

Analysis Method 901.1

Sample Name Outfall 018 (Composite) **Matrix Type:** WATER **Validation Level:** IV
Lab Sample Name: IUB2819-03 **Sample Date:** 2/27/2011 8:38:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cesium-137	10045973	ND	20	1.69	pCi/L	U	U	
Potassium-40	13966002	ND	25	24.3	pCi/L	U	U	

Analysis Method 903.1

Sample Name Outfall 018 (Composite) **Matrix Type:** WATER **Validation Level:** IV
Lab Sample Name: IUB2819-03 **Sample Date:** 2/27/2011 8:38:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	13982633	0.688	1	0.529	pCi/L	Jb	J	DNQ

Analysis Method 904

Sample Name Outfall 018 (Composite) **Matrix Type:** WATER **Validation Level:** IV
Lab Sample Name: IUB2819-03 **Sample Date:** 2/27/2011 8:38:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-228	15262201	-0.03	1	0.462	pCi/L	U	U	

Analysis Method 905

Sample Name Outfall 018 (Composite) **Matrix Type:** WATER **Validation Level:** IV
Lab Sample Name: IUB2819-03 **Sample Date:** 2/27/2011 8:38:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	-0.256	2	0.999	pCi/L	U	U	

Analysis Method 906

Sample Name	Outfall 018 (Composite)	Matrix Type:	WATER	Validation Level:	IV			
Lab Sample Name:	IUB2819-03	Sample Date:	2/27/2011 8:38:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	-78.4	500	170	pCi/L	U	U	

Analysis Method ASTM 5174-91

Sample Name	Outfall 018 (Composite)	Matrix Type:	WATER	Validation Level:	IV			
Lab Sample Name:	IUB2819-03	Sample Date:	2/27/2011 8:38:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Uranium, Total	NA	0.322	1	0.022	pCi/L	Jb	J	DNQ

Analysis Method EPA 200.7

Sample Name	Outfall 018 (Composite)	Matrix Type:	Water	Validation Level:	IV			
Lab Sample Name:	IUB2819-03	Sample Date:	2/27/2011 8:38:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Iron	7439-89-6	0.74	0.040	0.015	mg/l			
Zinc	7440-66-6	6.36	20.0	6.00	ug/l	J	J	DNQ, *III

Analysis Method EPA 200.7-Diss

Sample Name	Outfall 018 (Composite)	Matrix Type:	Water	Validation Level:	IV			
Lab Sample Name:	IUB2819-03	Sample Date:	2/27/2011 8:38:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Iron	7439-89-6	0.060	0.040	0.015	mg/l			
Zinc	7440-66-6	11.2	20.0	6.00	ug/l	J	J	DNQ, *III

Analysis Method EPA 245.1

Sample Name	Outfall 018 (Composite)	Matrix Type:	Water	Validation Level:	IV			
Lab Sample Name:	IUB2819-03	Sample Date:	2/27/2011 8:38:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.20	0.10	ug/l		U	

Analysis Method EPA 245.1-Diss

Sample Name	Outfall 018 (Composite)	Matrix Type:	Water	Validation Level:	IV			
Lab Sample Name:	IUB2819-03	Sample Date:	2/27/2011 8:38:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.20	0.10	ug/l		U	

Analysis Method EPA-5 1613B

Sample Name	Outfall 018 (Composite)	Matrix Type:	WATER	Validation Level:	IV			
Lab Sample Name:	IUB2819-03	Sample Date:	2/27/2011 8:38:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822-46-9	2e-005	0.00005	0.0000026	ug/L	J	J	DNQ
1,2,3,4,6,7,8-HpCDF	67562-39-4	4.2e-006	0.00005	0.0000023	ug/L	J	J	DNQ
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.00005	0.0000035	ug/L		U	
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.00005	0.0000032	ug/L		U	
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.00005	0.0000029	ug/L		U	
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.00005	0.0000028	ug/L		U	
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.00005	0.0000027	ug/L		U	
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.00005	0.0000025	ug/L		U	
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.00005	0.000004	ug/L		U	
1,2,3,7,8-PeCDD	40321-76-4	ND	0.00005	0.000007	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	ND	0.00005	0.0000076	ug/L		U	
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.00005	0.0000026	ug/L		U	
2,3,4,7,8-PeCDF	57117-31-4	ND	0.00005	0.0000077	ug/L		U	
2,3,7,8-TCDD	1746-01-6	ND	0.00001	0.000007	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.00001	0.0000013	ug/L		U	
OCDD	3268-87-9	0.00023	0.0001	0.000011	ug/L	Ba		
OCDF	39001-02-0	9.8e-006	0.0001	0.0000043	ug/L	J	J	DNQ
Total HpCDD	37871-00-4	4.9e-005	0.00005	0.0000026	ug/L	J	J	DNQ
Total HpCDF	38998-75-3	9.5e-006	0.00005	0.0000028	ug/L	J	J	DNQ
Total HxCDD	34465-46-8	ND	0.00005	0.0000025	ug/L		U	
Total HxCDF	55684-94-1	ND	0.00005	0.0000026	ug/L		U	
Total PeCDD	36088-22-9	ND	0.00005	0.0000068	ug/L		U	
Total PeCDF	30402-15-4	ND	0.00005	0.0000069	ug/L		U	
Total TCDD	41903-57-5	ND	0.00001	0.000007	ug/L		U	
Total TCDF	55722-27-5	ND	0.00001	0.0000013	ug/L		U	

Analysis Method SM2130B

Sample Name Outfall 018 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUB2819-03 **Sample Date:** 2/27/2011 8:38:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Turbidity	Turb	18	1.0	0.040	NTU			

Analysis Method SM2510B

Sample Name Outfall 018 (Grab) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUB2819-01 **Sample Date:** 2/26/2011 8:50:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Specific Conductance	NA	310	1.0	1.0	umhos/c	B-1		

APPENDIX G

Section 52

Outfall 018 – February 26 & 27, 2011

Test America Analytical Laboratory Report

LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project: Routine Outfall 018 2010
Routine Outfall 018

Sampled: 02/26/11-02/27/11
Received: 02/26/11
Issued: 04/04/11 12:52

NELAP #01108CA California ELAP#2706 CSDLAC #10256 AZ #AZ0671 NV #CA01531

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain(s) of Custody, 3 pages, are included and are an integral part of this report.

This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 2°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the TestAmerica Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Results that fall between the MDL and RL are 'J' flagged.

SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.

ADDITIONAL INFORMATION: WATER, 1613B, Dioxins/Furans with Totals
Sample: 1
OCDD in the associated Method Blank (MB) is reported at a concentration below the estimated detection limit (EDL). The data is reported as a positive detection because the peaks elute at the correct retention time for both characteristic ions and have a signal to noise ratio greater than the method required 2.5:1.

The reporting limit has been raised for 2,3,7,8-TCDF in the laboratory control sample/laboratory control sample duplicate (LCS/LCSD) associated with this sample due to elevated noise. There is no adverse impact to the quality of the data as a result of this anomaly. Analytical data is reported with a "G" flag.

TestAmerica Irvine

Debby Wilson
Project Manager

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
Routine Outfall 018
Report Number: IUB2819

Sampled: 02/26/11-02/27/11
Received: 02/26/11

LABORATORY ID

IUB2819-01
IUB2819-02
IUB2819-03
IUB2819-04

CLIENT ID

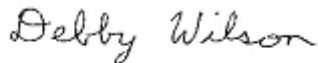
Outfall 018 (Grab)
Trip Blanks
Outfall 018 (Composite)
Trip Blanks

MATRIX

Water
Water
Water
Water

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.

Reviewed By:



TestAmerica Irvine

Debby Wilson
Project Manager

MWH-Pasadena/Boeing
 618 Michillinda Avenue, Suite 200
 Arcadia, CA 91007
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
 Routine Outfall 018
 Report Number: IUB2819

Sampled: 02/26/11-02/27/11
 Received: 02/26/11

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUB2819-01 (Outfall 018 (Grab) - Water)					Sampled: 02/26/11				
Reporting Units: ug/l									
1,2-Dichloroethane	EPA 624	11C0786	0.28	0.50	ND	1	MB	03/06/11	
1,1-Dichloroethene	EPA 624	11C0786	0.42	2.0	ND	1	MB	03/06/11	
Trichloroethene	EPA 624	11C0786	0.26	2.0	ND	1	MB	03/06/11	
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					95 %				
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					101 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					103 %				
Sample ID: IUB2819-02 (Trip Blanks - Water)					Sampled: 02/26/11				
Reporting Units: ug/l									
1,2-Dichloroethane	EPA 624	11C0786	0.28	0.50	ND	1	MB	03/06/11	
1,1-Dichloroethene	EPA 624	11C0786	0.42	2.0	ND	1	MB	03/06/11	
Trichloroethene	EPA 624	11C0786	0.26	2.0	ND	1	MB	03/06/11	
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					96 %				
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					105 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					105 %				

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Sampled: 02/26/11-02/27/11
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ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUB2819-03 (Outfall 018 (Composite) - Water)					Sampled: 02/27/11				
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	11B3517	1.63	4.78	ND	0.957	up	03/02/11	
2,4-Dinitrotoluene	EPA 625	11B3517	0.191	4.78	ND	0.957	up	03/02/11	
N-Nitrosodimethylamine	EPA 625	11B3517	0.0957	4.78	ND	0.957	up	03/02/11	
Pentachlorophenol	EPA 625	11B3517	0.0957	4.78	ND	0.957	up	03/02/11	
2,4,6-Trichlorophenol	EPA 625	11B3517	0.0957	5.74	ND	0.957	up	03/02/11	
<i>Surrogate: 2,4,6-Tribromophenol (40-120%)</i>					82 %				
<i>Surrogate: 2-Fluorobiphenyl (50-120%)</i>					74 %				
<i>Surrogate: 2-Fluorophenol (30-120%)</i>					66 %				
<i>Surrogate: Nitrobenzene-d5 (45-120%)</i>					75 %				
<i>Surrogate: Phenol-d6 (35-120%)</i>					71 %				
<i>Surrogate: Terphenyl-d14 (50-125%)</i>					90 %				

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Sampled: 02/26/11-02/27/11
Received: 02/26/11

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUB2819-03 (Outfall 018 (Composite) - Water) - cont.					Sampled: 02/27/11				
Reporting Units: ug/l									
alpha-BHC	EPA 608	11C0141	0.0024	0.0096	ND	0.962	CN	03/13/11	
<i>Surrogate: Decachlorobiphenyl (45-120%)</i>					56 %				
<i>Surrogate: Tetrachloro-m-xylene (35-115%)</i>					64 %				

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Sampled: 02/26/11-02/27/11
Received: 02/26/11

HEXANE EXTRACTABLE MATERIAL

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUB2819-01 (Outfall 018 (Grab) - Water)					Sampled: 02/26/11				
Reporting Units: mg/l									
Hexane Extractable Material (Oil & Grease)	EPA 1664A	11C0978	1.4	4.8	ND	1	DA	03/08/11	

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Sampled: 02/26/11-02/27/11
 Received: 02/26/11

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUB2819-03 (Outfall 018 (Composite) - Water)					Sampled: 02/27/11				
Reporting Units: mg/l									
Iron	EPA 200.7	11C0647	0.015	0.040	0.74	1	DT	03/08/11	
Sample ID: IUB2819-03 (Outfall 018 (Composite) - Water)					Sampled: 02/27/11				
Reporting Units: ug/l									
Mercury	EPA 245.1	11C0167	0.10	0.20	ND	1	DB	03/02/11	
Cadmium	EPA 200.8	11C0501	0.10	1.0	ND	1	RDC	03/04/11	
Copper	EPA 200.8	11C0501	0.50	2.0	2.6	1	RDC	03/04/11	
Lead	EPA 200.8	11C0501	0.20	1.0	0.49	1	RDC	03/04/11	J
Selenium	EPA 200.8	11C0501	0.50	2.0	ND	1	RDC	03/04/11	
Sample ID: IUB2819-03RE1 (Outfall 018 (Composite) - Water)					Sampled: 02/27/11				
Reporting Units: ug/l									
Zinc	EPA 200.7	11C2212	6.00	20.0	6.36	1	LL	03/16/11	J

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 Report Number: IUB2819

Sampled: 02/26/11-02/27/11
 Received: 02/26/11

DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUB2819-03 (Outfall 018 (Composite) - Water) - cont.					Sampled: 02/27/11				
Reporting Units: mg/l									
Iron	EPA 200.7-Diss	11B3548	0.015	0.040	0.060	1	DP	03/09/11	
Sample ID: IUB2819-03 (Outfall 018 (Composite) - Water)					Sampled: 02/27/11				
Reporting Units: ug/l									
Mercury	EPA 245.1-Diss	11C0168	0.10	0.20	ND	1	DB	03/02/11	
Cadmium	EPA 200.8-Diss	11C0285	0.10	1.0	ND	1	RDC	03/03/11	
Copper	EPA 200.8-Diss	11C0285	0.50	2.0	1.2	1	RDC	03/03/11	J
Lead	EPA 200.8-Diss	11C0285	0.20	1.0	ND	1	RDC	03/03/11	
Selenium	EPA 200.8-Diss	11C0285	0.50	2.0	ND	1	RDC	03/03/11	
Sample ID: IUB2819-03RE1 (Outfall 018 (Composite) - Water)					Sampled: 02/27/11				
Reporting Units: ug/l									
Zinc	EPA 200.7-Diss	11C2222	6.00	20.0	11.2	1	DP	03/16/11	J

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Sampled: 02/26/11-02/27/11
 Received: 02/26/11

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUB2819-03 (Outfall 018 (Composite) - Water) - cont.					Sampled: 02/27/11				
Reporting Units: mg/l									
Ammonia-N (Distilled)	SM4500NH3-C	11C0150	0.500	0.500	ND	1	TMK	03/01/11	
Biochemical Oxygen Demand	SM5210B	11B3539	0.50	2.0	1.4	1	XL	03/05/11	J
Chloride	EPA 300.0	11B3465	0.30	0.50	11	1	KS	02/27/11	
Nitrate-N	EPA 300.0	11B3465	0.060	0.11	0.15	1	KS	02/27/11	
Nitrite-N	EPA 300.0	11B3465	0.090	0.15	ND	1	KS	02/27/11	
Nitrate/Nitrite-N	EPA 300.0	11B3465	0.15	0.26	0.15	1	KS	02/27/11	J
Sulfate	EPA 300.0	11B3465	3.0	5.0	48	10	KS	02/27/11	
Surfactants (MBAS)	SM5540-C	11B3555	0.050	0.10	0.068	1	SLA	02/28/11	J
Total Dissolved Solids	SM2540C	11C0204	1.0	10	220	1	MC	03/02/11	
Total Suspended Solids	SM 2540D	11C0585	1.0	10	8.0	1	DK1	03/03/11	J

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INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUB2819-01 (Outfall 018 (Grab) - Water)					Sampled: 02/26/11				
Reporting Units: ml/l									
Total Settleable Solids	SM2540F	11B3432	0.10	0.10	ND	1	AC1	02/26/11	
Sample ID: IUB2819-03 (Outfall 018 (Composite) - Water)					Sampled: 02/27/11				
Reporting Units: NTU									
Turbidity	SM2130B	11B3525	0.040	1.0	18	1	RRZ	02/28/11	
Sample ID: IUB2819-03 (Outfall 018 (Composite) - Water)					Sampled: 02/27/11				
Reporting Units: ug/l									
Perchlorate	EPA 314.0	11C0021	0.90	4.0	ND	1	mn	03/01/11	
Total Cyanide	SM4500CN-E	11C0158	2.2	5.0	ND	1	HH	03/01/11	
Sample ID: IUB2819-01 (Outfall 018 (Grab) - Water)					Sampled: 02/26/11				
Reporting Units: umhos/cm @ 25C									
Specific Conductance	SM2510B	11C0016	1.0	1.0	310	1	MC	03/01/11	B-1

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Sampled: 02/26/11-02/27/11
Received: 02/26/11

8669

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUB2819-03 (Outfall 018 (Composite) - Water)					Sampled: 02/27/11				
Reporting Units: pCi/L									
Uranium, Total	8669	8669		1	0.322	1	TSC	03/15/11	Jb
Sample ID: IUB2819-04 (Trip Blanks - Water)					Sampled: 02/27/11				
Reporting Units: pCi/L									
Uranium, Total	8669	8669		1	ND	1	TSC	03/15/11	U

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Sampled: 02/26/11-02/27/11
 Received: 02/26/11

900

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUB2819-03 (Outfall 018 (Composite) - Water)					Sampled: 02/27/11				
Reporting Units: pCi/L									
Gross Alpha	900	8669		3	0.345	1	LS	03/15/11	U
Gross Beta	900	8669		4	3.1	1	LS	03/15/11	Jb
Sample ID: IUB2819-04 (Trip Blanks - Water)					Sampled: 02/27/11				
Reporting Units: pCi/L									
Gross Alpha	900	8669		3	0.033	1	LS	03/15/11	U
Gross Beta	900	8669		4	-0.466	1	LS	03/15/11	U

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 Report Number: IUB2819

Sampled: 02/26/11-02/27/11
 Received: 02/26/11

901.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUB2819-03 (Outfall 018 (Composite) - Water)					Sampled: 02/27/11				
Reporting Units: pCi/L									
Cesium-137	901.1	8669		20	ND	1	LS	03/11/11	U
Potassium-40	901.1	8669		25	ND	1	LS	03/11/11	U
Sample ID: IUB2819-04 (Trip Blanks - Water)					Sampled: 02/27/11				
Reporting Units: pCi/L									
Cesium-137	901.1	8669		20	ND	1	LS	03/11/11	U
Potassium-40	901.1	8669		25	ND	1	LS	03/11/11	U

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 Received: 02/26/11

903.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUB2819-03 (Outfall 018 (Composite) - Water)					Sampled: 02/27/11				
Reporting Units: pCi/L									
Radium-226	903.1	8669		1	0.688	1	ASM	03/19/11	Jb
Sample ID: IUB2819-04 (Trip Blanks - Water)					Sampled: 02/27/11				
Reporting Units: pCi/L									
Radium-226	903.1	8669		1	-0.046	1	ASM	03/19/11	U

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 Received: 02/26/11

904

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUB2819-03 (Outfall 018 (Composite) - Water)					Sampled: 02/27/11				
Reporting Units: pCi/L									
Radium-228	904	8669		1	-0.03	1	ASM	03/18/11	U
Sample ID: IUB2819-04 (Trip Blanks - Water)					Sampled: 02/27/11				
Reporting Units: pCi/L									
Radium-228	904	8669		1	-0.065	1	ASM	03/18/11	U

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 Received: 02/26/11

905

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUB2819-03 (Outfall 018 (Composite) - Water)					Sampled: 02/27/11				
Reporting Units: pCi/L									
Strontium-90	905	8669		2	-0.256	1	ASM	03/16/11	U
Sample ID: IUB2819-04 (Trip Blanks - Water)					Sampled: 02/27/11				
Reporting Units: pCi/L									
Strontium-90	905	8669		2	0.046	1	ASM	03/16/11	U

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Received: 02/26/11

906

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUB2819-03 (Outfall 018 (Composite) - Water)					Sampled: 02/27/11				
Reporting Units: pCi/L									
Tritium	906	8669		500	-78.4	1	WL	03/22/11	U

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Received: 02/26/11

EPA-5 1613Bx

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUB2819-03 (Outfall 018 (Composite) - Water) - cont.					Sampled: 02/27/11				
Reporting Units: ug/L									
1,2,3,4,6,7,8-HpCDD	EPA-5 1613B	1060411	0.0000026	0.00005	2e-005	0.98	SO	03/02/11	J
1,2,3,4,6,7,8-HpCDF	EPA-5 1613B	1060411	0.0000023	0.00005	4.2e-006	0.98	SO	03/02/11	J
1,2,3,4,7,8,9-HpCDF	EPA-5 1613B	1060411	0.0000035	0.00005	ND	0.98	SO	03/02/11	
1,2,3,4,7,8-HxCDD	EPA-5 1613B	1060411	0.0000032	0.00005	ND	0.98	SO	03/02/11	
1,2,3,4,7,8-HxCDF	EPA-5 1613B	1060411	0.0000029	0.00005	ND	0.98	SO	03/02/11	
1,2,3,6,7,8-HxCDD	EPA-5 1613B	1060411	0.0000028	0.00005	ND	0.98	SO	03/02/11	
1,2,3,6,7,8-HxCDF	EPA-5 1613B	1060411	0.0000027	0.00005	ND	0.98	SO	03/02/11	
1,2,3,7,8,9-HxCDD	EPA-5 1613B	1060411	0.0000025	0.00005	ND	0.98	SO	03/02/11	
1,2,3,7,8,9-HxCDF	EPA-5 1613B	1060411	0.000004	0.00005	ND	0.98	SO	03/02/11	
1,2,3,7,8-PeCDD	EPA-5 1613B	1060411	0.000007	0.00005	ND	0.98	SO	03/02/11	
1,2,3,7,8-PeCDF	EPA-5 1613B	1060411	0.0000076	0.00005	ND	0.98	SO	03/02/11	
2,3,4,6,7,8-HxCDF	EPA-5 1613B	1060411	0.0000026	0.00005	ND	0.98	SO	03/02/11	
2,3,4,7,8-PeCDF	EPA-5 1613B	1060411	0.0000077	0.00005	ND	0.98	SO	03/02/11	
2,3,7,8-TCDD	EPA-5 1613B	1060411	0.000007	0.00001	ND	0.98	SO	03/02/11	
2,3,7,8-TCDF	EPA-5 1613B	1060411	0.0000013	0.00001	ND	0.98	SO	03/02/11	
OCDD	EPA-5 1613B	1060411	0.000011	0.0001	0.00023	0.98	SO	03/02/11	Ba
OCDF	EPA-5 1613B	1060411	0.0000043	0.0001	9.8e-006	0.98	SO	03/02/11	J
Total HpCDD	EPA-5 1613B	1060411	0.0000026	0.00005	4.9e-005	0.98	SO	03/02/11	J
Total HpCDF	EPA-5 1613B	1060411	0.0000028	0.00005	9.5e-006	0.98	SO	03/02/11	J
Total HxCDD	EPA-5 1613B	1060411	0.0000025	0.00005	ND	0.98	SO	03/02/11	
Total HxCDF	EPA-5 1613B	1060411	0.0000026	0.00005	ND	0.98	SO	03/02/11	
Total PeCDD	EPA-5 1613B	1060411	0.0000068	0.00005	ND	0.98	SO	03/02/11	
Total PeCDF	EPA-5 1613B	1060411	0.0000069	0.00005	ND	0.98	SO	03/02/11	
Total TCDD	EPA-5 1613B	1060411	0.000007	0.00001	ND	0.98	SO	03/02/11	
Total TCDF	EPA-5 1613B	1060411	0.0000013	0.00001	ND	0.98	SO	03/02/11	

Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (23-140%)	91 %
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (28-143%)	109 %
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF (26-138%)	106 %
Surrogate: 13C-1,2,3,4,7,8-HxCDD (32-141%)	87 %
Surrogate: 13C-1,2,3,4,7,8-HxCDF (26-152%)	95 %
Surrogate: 13C-1,2,3,6,7,8-HxCDD (28-130%)	96 %
Surrogate: 13C-1,2,3,6,7,8-HxCDF (26-123%)	108 %
Surrogate: 13C-1,2,3,7,8,9-HxCDF (29-147%)	104 %
Surrogate: 13C-1,2,3,7,8-PeCDD (25-181%)	81 %
Surrogate: 13C-1,2,3,7,8-PeCDF (24-185%)	89 %
Surrogate: 13C-2,3,4,6,7,8-HxCDF (28-136%)	107 %
Surrogate: 13C-2,3,4,7,8-PeCDF (21-178%)	92 %
Surrogate: 13C-2,3,7,8-TCDD (25-164%)	81 %
Surrogate: 13C-2,3,7,8-TCDF (24-169%)	94 %
Surrogate: 13C-OCDD (17-157%)	101 %
Surrogate: 37Cl4-2,3,7,8-TCDD (35-197%)	93 %

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MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
Routine Outfall 018
Report Number: IUB2819

Sampled: 02/26/11-02/27/11
Received: 02/26/11

SHORT HOLD TIME DETAIL REPORT

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: Outfall 018 (Grab) (IUB2819-01) - Water					
SM2540F	2	02/26/2011 08:50	02/26/2011 14:40	02/26/2011 18:00	02/26/2011 18:00
Sample ID: Outfall 018 (Composite) (IUB2819-03) - Water					
EPA 300.0	2	02/27/2011 08:38	02/26/2011 14:40	02/27/2011 16:15	02/27/2011 16:53
Filtration	1	02/27/2011 08:38	02/26/2011 14:40	02/27/2011 20:30	02/27/2011 20:30
SM2130B	2	02/27/2011 08:38	02/26/2011 14:40	02/28/2011 08:40	02/28/2011 08:40
SM5210B	2	02/27/2011 08:38	02/26/2011 14:40	02/28/2011 09:36	03/05/2011 12:00
SM5540-C	2	02/27/2011 08:38	02/26/2011 14:40	02/28/2011 15:57	02/28/2011 21:49

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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11C0786 Extracted: 03/06/11											
Blank Analyzed: 03/06/2011 (11C0786-BLK1)											
1,2-Dichloroethane	ND	0.50	0.28	ug/l							
1,1-Dichloroethene	ND	2.0	0.42	ug/l							
Trichloroethene	ND	2.0	0.26	ug/l							
Surrogate: 4-Bromofluorobenzene	23.6			ug/l	25.0		94	80-120			
Surrogate: Dibromofluoromethane	24.7			ug/l	25.0		99	80-120			
Surrogate: Toluene-d8	25.6			ug/l	25.0		102	80-120			
LCS Analyzed: 03/06/2011 (11C0786-BS1)											
1,2-Dichloroethane	28.9	0.50	0.28	ug/l	25.0		115	60-140			
1,1-Dichloroethene	25.8	2.0	0.42	ug/l	25.0		103	70-125			
Trichloroethene	27.4	2.0	0.26	ug/l	25.0		109	70-125			
Surrogate: 4-Bromofluorobenzene	23.7			ug/l	25.0		95	80-120			
Surrogate: Dibromofluoromethane	24.9			ug/l	25.0		100	80-120			
Surrogate: Toluene-d8	26.0			ug/l	25.0		104	80-120			
Matrix Spike Analyzed: 03/06/2011 (11C0786-MS1)						Source: IUB2819-01					
1,2-Dichloroethane	29.5	0.50	0.28	ug/l	25.0	ND	118	60-140			
1,1-Dichloroethene	26.4	2.0	0.42	ug/l	25.0	ND	105	60-130			
Trichloroethene	26.7	2.0	0.26	ug/l	25.0	ND	107	65-125			
Surrogate: 4-Bromofluorobenzene	23.8			ug/l	25.0		95	80-120			
Surrogate: Dibromofluoromethane	26.4			ug/l	25.0		105	80-120			
Surrogate: Toluene-d8	25.9			ug/l	25.0		104	80-120			
Matrix Spike Dup Analyzed: 03/06/2011 (11C0786-MSD1)						Source: IUB2819-01					
1,2-Dichloroethane	27.8	0.50	0.28	ug/l	25.0	ND	111	60-140	6	20	
1,1-Dichloroethene	25.6	2.0	0.42	ug/l	25.0	ND	103	60-130	3	20	
Trichloroethene	26.1	2.0	0.26	ug/l	25.0	ND	104	65-125	2	20	
Surrogate: 4-Bromofluorobenzene	23.8			ug/l	25.0		95	80-120			
Surrogate: Dibromofluoromethane	26.1			ug/l	25.0		104	80-120			
Surrogate: Toluene-d8	25.7			ug/l	25.0		103	80-120			

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METHOD BLANK/QC DATA

ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11B3517 Extracted: 02/28/11											
Blank Analyzed: 03/02/2011 (11B3517-BLK1)											
Bis(2-ethylhexyl)phthalate	ND	5.00	1.70	ug/l							
2,4-Dinitrotoluene	ND	5.00	0.200	ug/l							
N-Nitrosodimethylamine	ND	5.00	0.100	ug/l							
Pentachlorophenol	ND	5.00	0.100	ug/l							
2,4,6-Trichlorophenol	ND	6.00	0.100	ug/l							
Surrogate: 2,4,6-Tribromophenol	18.7			ug/l	20.0		94	40-120			
Surrogate: 2-Fluorobiphenyl	8.02			ug/l	10.0		80	50-120			
Surrogate: 2-Fluorophenol	16.3			ug/l	20.0		81	30-120			
Surrogate: Nitrobenzene-d5	8.20			ug/l	10.0		82	45-120			
Surrogate: Phenol-d6	16.3			ug/l	20.0		81	35-120			
Surrogate: Terphenyl-d14	9.98			ug/l	10.0		100	50-125			
LCS Analyzed: 03/02/2011 (11B3517-BS1)											
Bis(2-ethylhexyl)phthalate	10.7	5.00	1.70	ug/l	10.0		107	65-130			MNR1
2,4-Dinitrotoluene	8.58	5.00	0.200	ug/l	10.0		86	65-120			
N-Nitrosodimethylamine	7.26	5.00	0.100	ug/l	10.0		73	45-120			
Pentachlorophenol	7.48	5.00	0.100	ug/l	10.0		75	24-121			
2,4,6-Trichlorophenol	8.14	6.00	0.100	ug/l	10.0		81	55-120			
Surrogate: 2,4,6-Tribromophenol	17.3			ug/l	20.0		86	40-120			
Surrogate: 2-Fluorobiphenyl	7.46			ug/l	10.0		75	50-120			
Surrogate: 2-Fluorophenol	13.3			ug/l	20.0		67	30-120			
Surrogate: Nitrobenzene-d5	7.28			ug/l	10.0		73	45-120			
Surrogate: Phenol-d6	14.5			ug/l	20.0		72	35-120			
Surrogate: Terphenyl-d14	9.32			ug/l	10.0		93	50-125			
LCS Dup Analyzed: 03/02/2011 (11B3517-BSD1)											
Bis(2-ethylhexyl)phthalate	9.22	5.00	1.70	ug/l	10.0		92	65-130	15	20	
2,4-Dinitrotoluene	7.78	5.00	0.200	ug/l	10.0		78	65-120	10	20	
N-Nitrosodimethylamine	6.92	5.00	0.100	ug/l	10.0		69	45-120	5	20	
Pentachlorophenol	5.94	5.00	0.100	ug/l	10.0		59	24-121	23	25	
2,4,6-Trichlorophenol	7.52	6.00	0.100	ug/l	10.0		75	55-120	8	30	
Surrogate: 2,4,6-Tribromophenol	14.9			ug/l	20.0		74	40-120			
Surrogate: 2-Fluorobiphenyl	6.72			ug/l	10.0		67	50-120			
Surrogate: 2-Fluorophenol	12.7			ug/l	20.0		63	30-120			
Surrogate: Nitrobenzene-d5	6.62			ug/l	10.0		66	45-120			
Surrogate: Phenol-d6	14.1			ug/l	20.0		70	35-120			

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METHOD BLANK/QC DATA

ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11B3517 Extracted: 02/28/11											
LCS Dup Analyzed: 03/02/2011 (11B3517-BSD1)											
Surrogate: Terphenyl-d14	8.24			ug/l	10.0		82	50-125			

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METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11C0141 Extracted: 03/01/11											
Blank Analyzed: 03/11/2011 (11C0141-BLK1)											
alpha-BHC	ND	0.010	0.0025	ug/l							
Surrogate: Decachlorobiphenyl	0.340			ug/l	0.500		68	45-120			
Surrogate: Tetrachloro-m-xylene	0.323			ug/l	0.500		65	35-115			
LCS Analyzed: 03/11/2011 (11C0141-BS1)											
alpha-BHC	0.354	0.010	0.0025	ug/l	0.500		71	45-115			MNR1
Surrogate: Decachlorobiphenyl	0.319			ug/l	0.500		64	45-120			
Surrogate: Tetrachloro-m-xylene	0.296			ug/l	0.500		59	35-115			
LCS Dup Analyzed: 03/11/2011 (11C0141-BSD1)											
alpha-BHC	0.403	0.010	0.0025	ug/l	0.500		81	45-115	13	30	
Surrogate: Decachlorobiphenyl	0.402			ug/l	0.500		80	45-120			
Surrogate: Tetrachloro-m-xylene	0.339			ug/l	0.500		68	35-115			

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METHOD BLANK/QC DATA

HEXANE EXTRACTABLE MATERIAL

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11C0978 Extracted: 03/08/11											
Blank Analyzed: 03/08/2011 (11C0978-BLK1)											
Hexane Extractable Material (Oil & Grease)	ND	5.0	1.4	mg/l							
LCS Analyzed: 03/08/2011 (11C0978-BS1)											
Hexane Extractable Material (Oil & Grease)	18.9	5.0	1.4	mg/l	20.0		94	78-114			MNR1
LCS Dup Analyzed: 03/08/2011 (11C0978-BSD1)											
Hexane Extractable Material (Oil & Grease)	19.2	5.0	1.4	mg/l	20.0		96	78-114	2	11	

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<u>Batch: 11C0167 Extracted: 03/01/11</u>											
Blank Analyzed: 03/02/2011 (11C0167-BLK1)											
Mercury	ND	0.20	0.10	ug/l							
LCS Analyzed: 03/02/2011 (11C0167-BS1)											
Mercury	7.70	0.20	0.10	ug/l	8.00		96	85-115			
Matrix Spike Analyzed: 03/02/2011 (11C0167-MS1)											
						Source: IUB2630-01					
Mercury	5.72	0.20	0.10	ug/l	8.00	ND	71	70-130			
Matrix Spike Dup Analyzed: 03/02/2011 (11C0167-MSD1)											
						Source: IUB2630-01					
Mercury	5.81	0.20	0.10	ug/l	8.00	ND	73	70-130	2	20	
<u>Batch: 11C0501 Extracted: 03/03/11</u>											
Blank Analyzed: 03/04/2011 (11C0501-BLK1)											
Cadmium	ND	1.0	0.10	ug/l							
Copper	ND	2.0	0.50	ug/l							
Lead	ND	1.0	0.20	ug/l							
Selenium	ND	2.0	0.50	ug/l							
LCS Analyzed: 03/04/2011 (11C0501-BS1)											
Cadmium	83.9	1.0	0.10	ug/l	80.0		105	85-115			
Copper	79.1	2.0	0.50	ug/l	80.0		99	85-115			
Lead	87.9	1.0	0.20	ug/l	80.0		110	85-115			
Selenium	76.0	2.0	0.50	ug/l	80.0		95	85-115			
Matrix Spike Analyzed: 03/04/2011 (11C0501-MS1)											
						Source: IUC0095-07					
Cadmium	80.6	1.0	0.10	ug/l	80.0	ND	101	70-130			
Copper	72.3	2.0	0.50	ug/l	80.0	2.55	87	70-130			
Lead	85.0	1.0	0.20	ug/l	80.0	ND	106	70-130			
Selenium	75.8	2.0	0.50	ug/l	80.0	0.659	94	70-130			

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METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11C0501 Extracted: 03/03/11											
Matrix Spike Analyzed: 03/04/2011 (11C0501-MS2)						Source: IUC0095-01					
Cadmium	80.3	1.0	0.10	ug/l	80.0	0.112	100	70-130			
Copper	71.1	2.0	0.50	ug/l	80.0	2.29	86	70-130			
Lead	86.4	1.0	0.20	ug/l	80.0	ND	108	70-130			
Selenium	78.9	2.0	0.50	ug/l	80.0	2.23	96	70-130			
Matrix Spike Dup Analyzed: 03/04/2011 (11C0501-MSD1)						Source: IUC0095-07					
Cadmium	80.9	1.0	0.10	ug/l	80.0	ND	101	70-130	0.4	20	
Copper	73.0	2.0	0.50	ug/l	80.0	2.55	88	70-130	1	20	
Lead	85.5	1.0	0.20	ug/l	80.0	ND	107	70-130	0.7	20	
Selenium	74.7	2.0	0.50	ug/l	80.0	0.659	93	70-130	1	20	
Batch: 11C0647 Extracted: 03/04/11											
Blank Analyzed: 03/07/2011 (11C0647-BLK1)											
Iron	ND	0.040	0.015	mg/l							
LCS Analyzed: 03/07/2011 (11C0647-BS1)											
Iron	0.559	0.040	0.015	mg/l	0.500		112	85-115			
Matrix Spike Analyzed: 03/07/2011 (11C0647-MS1)						Source: IUC0168-01					
Iron	1.12	0.040	0.015	mg/l	0.500	0.512	122	70-130			
Matrix Spike Analyzed: 03/07/2011 (11C0647-MS2)						Source: IUC0168-04					
Iron	0.619	0.040	0.015	mg/l	0.500	0.119	100	70-130			
Matrix Spike Dup Analyzed: 03/07/2011 (11C0647-MSD1)						Source: IUC0168-01					
Iron	1.01	0.040	0.015	mg/l	0.500	0.512	100	70-130	10	20	

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11C2212 Extracted: 03/16/11											
Blank Analyzed: 03/16/2011 (11C2212-BLK1)											
Zinc	ND	20.0	6.00	ug/l							
LCS Analyzed: 03/16/2011 (11C2212-BS1)											
Zinc	489	20.0	6.00	ug/l	500		98	85-115			
Matrix Spike Analyzed: 03/16/2011 (11C2212-MS1)											
						Source: IUC1036-05					
Zinc	517	20.0	6.00	ug/l	500	ND	103	70-130			
Matrix Spike Analyzed: 03/16/2011 (11C2212-MS2)											
						Source: IUC1185-01					
Zinc	540	20.0	6.00	ug/l	500	10.0	106	70-130			
Matrix Spike Dup Analyzed: 03/16/2011 (11C2212-MSD1)											
						Source: IUC1036-05					
Zinc	522	20.0	6.00	ug/l	500	ND	104	70-130	0.9	20	

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METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11B3548 Extracted: 02/28/11											
Blank Analyzed: 03/02/2011 (11B3548-BLK1)											
Iron	ND	0.040	0.015	mg/l							
LCS Analyzed: 03/02/2011 (11B3548-BS1)											
Iron	0.510	0.040	0.015	mg/l	0.500		102	85-115			
Matrix Spike Analyzed: 03/02/2011 (11B3548-MS1)											
Iron	0.501	0.040	0.015	mg/l	0.500	ND	100	70-130			
Matrix Spike Analyzed: 03/07/2011 (11B3548-MS2)											
Iron	0.431	0.080	0.030	mg/l	0.500	ND	86	70-130			
Matrix Spike Dup Analyzed: 03/02/2011 (11B3548-MSD1)											
Iron	0.500	0.040	0.015	mg/l	0.500	ND	100	70-130	0.3	20	
Batch: 11C0168 Extracted: 03/01/11											
Blank Analyzed: 03/02/2011 (11C0168-BLK1)											
Mercury	ND	0.20	0.10	ug/l							
LCS Analyzed: 03/02/2011 (11C0168-BS1)											
Mercury	7.30	0.20	0.10	ug/l	8.00		91	85-115			
Matrix Spike Analyzed: 03/02/2011 (11C0168-MS1)											
Mercury	7.27	0.20	0.10	ug/l	8.00	ND	91	70-130			
Matrix Spike Dup Analyzed: 03/02/2011 (11C0168-MSD1)											
Mercury	7.31	0.20	0.10	ug/l	8.00	ND	91	70-130	0.4	20	

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METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11C0285 Extracted: 03/02/11											
Blank Analyzed: 03/03/2011 (11C0285-BLK1)											
Cadmium	ND	1.0	0.10	ug/l							
Copper	ND	2.0	0.50	ug/l							
Lead	ND	1.0	0.20	ug/l							
Selenium	ND	2.0	0.50	ug/l							
LCS Analyzed: 03/03/2011 (11C0285-BS1)											
Cadmium	81.9	1.0	0.10	ug/l	80.0		102	85-115			
Copper	80.2	2.0	0.50	ug/l	80.0		100	85-115			
Lead	82.5	1.0	0.20	ug/l	80.0		103	85-115			
Selenium	80.8	2.0	0.50	ug/l	80.0		101	85-115			
Matrix Spike Analyzed: 03/03/2011 (11C0285-MS1) Source: IUB2862-01											
Cadmium	80.4	1.0	0.10	ug/l	80.0	ND	101	70-130			
Copper	79.3	2.0	0.50	ug/l	80.0	ND	99	70-130			
Lead	77.4	1.0	0.20	ug/l	80.0	ND	97	70-130			
Selenium	80.9	2.0	0.50	ug/l	80.0	ND	101	70-130			
Matrix Spike Analyzed: 03/03/2011 (11C0285-MS2) Source: IUB2647-01											
Cadmium	80.1	1.0	0.10	ug/l	80.0	ND	100	70-130			
Copper	79.0	2.0	0.50	ug/l	80.0	ND	99	70-130			
Lead	78.3	1.0	0.20	ug/l	80.0	ND	98	70-130			
Selenium	79.1	2.0	0.50	ug/l	80.0	ND	99	70-130			
Matrix Spike Dup Analyzed: 03/03/2011 (11C0285-MSD1) Source: IUB2862-01											
Cadmium	80.5	1.0	0.10	ug/l	80.0	ND	101	70-130	0.04		20
Copper	78.4	2.0	0.50	ug/l	80.0	ND	98	70-130	1		20
Lead	78.6	1.0	0.20	ug/l	80.0	ND	98	70-130	1		20
Selenium	80.6	2.0	0.50	ug/l	80.0	ND	101	70-130	0.3		20

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METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11C2222 Extracted: 03/16/11											
Blank Analyzed: 03/16/2011 (11C2222-BLK1)											
Zinc	ND	20.0	6.00	ug/l							
LCS Analyzed: 03/16/2011 (11C2222-BS1)											
Zinc	514	20.0	6.00	ug/l	500		103	85-115			MNR1
LCS Dup Analyzed: 03/16/2011 (11C2222-BSD1)											
Zinc	514	20.0	6.00	ug/l	500		103	85-115	0.08	20	

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11B3465 Extracted: 02/27/11											
Blank Analyzed: 02/27/2011 (11B3465-BLK1)											
Chloride	ND	0.50	0.30	mg/l							
Nitrate-N	ND	0.11	0.060	mg/l							
Nitrite-N	ND	0.15	0.090	mg/l							
Nitrate/Nitrite-N	ND	0.26	0.15	mg/l							
Sulfate	ND	0.50	0.30	mg/l							
LCS Analyzed: 02/27/2011 (11B3465-BS1)											
Chloride	4.57	0.50	0.30	mg/l	5.00		91	90-110			
Nitrate-N	1.09	0.11	0.060	mg/l	1.13		97	90-110			
Nitrite-N	1.44	0.15	0.090	mg/l	1.52		95	90-110			
Sulfate	9.78	0.50	0.30	mg/l	10.0		98	90-110			
Matrix Spike Analyzed: 02/27/2011 (11B3465-MS1)						Source: IUB2814-03					
Chloride	18.0	0.50	0.30	mg/l	5.00	12.6	109	80-120			
Nitrate-N	1.64	0.11	0.060	mg/l	1.13	0.561	96	80-120			
Nitrite-N	1.52	0.15	0.090	mg/l	1.52	ND	100	80-120			
Sulfate	16.2	0.50	0.30	mg/l	10.0	6.25	99	80-120			
Matrix Spike Dup Analyzed: 02/27/2011 (11B3465-MSD1)						Source: IUB2814-03					
Chloride	17.7	0.50	0.30	mg/l	5.00	12.6	103	80-120	2	20	
Nitrate-N	1.62	0.11	0.060	mg/l	1.13	0.561	94	80-120	1	20	
Nitrite-N	1.51	0.15	0.090	mg/l	1.52	ND	99	80-120	0.9	20	
Sulfate	15.9	0.50	0.30	mg/l	10.0	6.25	96	80-120	2	20	

Batch: 11B3525 Extracted: 02/28/11

Blank Analyzed: 02/28/2011 (11B3525-BLK1)

Turbidity	ND	1.0	0.040	NTU							
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<u>Batch: 11B3525 Extracted: 02/28/11</u>											
Duplicate Analyzed: 02/28/2011 (11B3525-DUP1)						Source: IUB2817-03					
Turbidity	9.62	1.0	0.040	NTU		9.81			2	20	
Duplicate Analyzed: 02/28/2011 (11B3525-DUP2)						Source: IUB2823-07					
Turbidity	7.15	1.0	0.040	NTU		7.44			4	20	
<u>Batch: 11B3539 Extracted: 02/28/11</u>											
Blank Analyzed: 03/05/2011 (11B3539-BLK1)											
Biochemical Oxygen Demand	ND	2.0	0.50	mg/l							
LCS Analyzed: 03/05/2011 (11B3539-BS1)											
Biochemical Oxygen Demand	186	100	25	mg/l	198		94	85-115			
LCS Dup Analyzed: 03/05/2011 (11B3539-BSD1)											
Biochemical Oxygen Demand	185	100	25	mg/l	198		93	85-115	0.3	20	
<u>Batch: 11B3555 Extracted: 02/28/11</u>											
Blank Analyzed: 02/28/2011 (11B3555-BLK1)											
Surfactants (MBAS)	ND	0.10	0.050	mg/l							
LCS Analyzed: 02/28/2011 (11B3555-BS1)											
Surfactants (MBAS)	0.254	0.10	0.050	mg/l	0.250		101	90-110			
Matrix Spike Analyzed: 02/28/2011 (11B3555-MS1)						Source: IUB2819-03					
Surfactants (MBAS)	0.322	0.10	0.050	mg/l	0.250	0.0682	102	50-125			

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11B3555 Extracted: 02/28/11											
Matrix Spike Dup Analyzed: 02/28/2011 (11B3555-MSD1)						Source: IUB2819-03					
Surfactants (MBAS)	0.323	0.10	0.050	mg/l	0.250	0.0682	102	50-125	0.2	20	
Batch: 11C0016 Extracted: 03/01/11											
Blank Analyzed: 03/01/2011 (11C0016-BLK1)											
Specific Conductance	1.14	1.0	1.0	hos/cm @ 2							B
LCS Analyzed: 03/01/2011 (11C0016-BS1)											
Specific Conductance	1390	1.0	1.0	hos/cm @ 2	1410		98	90-110			
Duplicate Analyzed: 03/01/2011 (11C0016-DUP1)						Source: IUB2878-01					
Specific Conductance	735	1.0	1.0	hos/cm @ 2		735			0	5	
Batch: 11C0021 Extracted: 03/01/11											
Blank Analyzed: 03/01/2011 (11C0021-BLK1)											
Perchlorate	ND	4.0	0.90	ug/l							
LCS Analyzed: 03/01/2011 (11C0021-BS1)											
Perchlorate	26.1	4.0	0.90	ug/l	25.0		105	85-115			
Matrix Spike Analyzed: 03/01/2011 (11C0021-MS1)						Source: IUB2737-03					
Perchlorate	29.7	4.0	0.90	ug/l	25.0	3.55	105	80-120			
Matrix Spike Dup Analyzed: 03/01/2011 (11C0021-MSD1)						Source: IUB2737-03					
Perchlorate	29.8	4.0	0.90	ug/l	25.0	3.55	105	80-120	0.5	20	

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<u>Batch: 11C0150 Extracted: 03/01/11</u>											
Blank Analyzed: 03/01/2011 (11C0150-BLK1)											
Ammonia-N (Distilled)	ND	0.500	0.500	mg/l							
LCS Analyzed: 03/01/2011 (11C0150-BS1)											
Ammonia-N (Distilled)	9.80	0.500	0.500	mg/l	10.0		98	80-115			
Matrix Spike Analyzed: 03/01/2011 (11C0150-MS1)											
						Source: IUB2621-03					
Ammonia-N (Distilled)	9.80	0.500	0.500	mg/l	10.0	ND	98	70-120			
Matrix Spike Dup Analyzed: 03/01/2011 (11C0150-MSD1)											
						Source: IUB2621-03					
Ammonia-N (Distilled)	9.80	0.500	0.500	mg/l	10.0	ND	98	70-120	0	15	
<u>Batch: 11C0158 Extracted: 03/01/11</u>											
Blank Analyzed: 03/01/2011 (11C0158-BLK1)											
Total Cyanide	ND	5.0	2.2	ug/l							
LCS Analyzed: 03/01/2011 (11C0158-BS1)											
Total Cyanide	196	5.0	2.2	ug/l	196		100	90-110			
Matrix Spike Analyzed: 03/01/2011 (11C0158-MS1)											
						Source: IUB2819-03					
Total Cyanide	201	5.0	2.2	ug/l	196	ND	102	70-115			
Matrix Spike Dup Analyzed: 03/01/2011 (11C0158-MSD1)											
						Source: IUB2819-03					
Total Cyanide	199	5.0	2.2	ug/l	196	ND	101	70-115	0.9	15	
<u>Batch: 11C0204 Extracted: 03/02/11</u>											
Blank Analyzed: 03/02/2011 (11C0204-BLK1)											
Total Dissolved Solids	ND	10	1.0	mg/l							

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<u>Batch: 11C0204 Extracted: 03/02/11</u>											
LCS Analyzed: 03/02/2011 (11C0204-BS1)											
Total Dissolved Solids	1020	10	1.0	mg/l	1000		102	90-110			
Duplicate Analyzed: 03/02/2011 (11C0204-DUP1)											
Total Dissolved Solids	365	10	1.0	mg/l		352			4	10	
<u>Batch: 11C0585 Extracted: 03/03/11</u>											
Blank Analyzed: 03/03/2011 (11C0585-BLK1)											
Total Suspended Solids	ND	10	1.0	mg/l							
LCS Analyzed: 03/03/2011 (11C0585-BS1)											
Total Suspended Solids	996	10	1.0	mg/l	1000		100	85-115			
Duplicate Analyzed: 03/03/2011 (11C0585-DUP1)											
Total Suspended Solids	13.0	10	1.0	mg/l		13.0			0	10	

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8669

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8669 Extracted: 03/15/11											
LCS Analyzed: 03/15/2011 (S103013-03)											
Uranium, Total	53.9	1	N/A	pCi/L	56.5		95	80-120			
Blank Analyzed: 03/15/2011 (S103013-04)											
Uranium, Total	ND	1	N/A	pCi/L				-			U
Duplicate Analyzed: 03/15/2011 (S103013-05)											
Uranium, Total	0.574	1	N/A	pCi/L				-	7		Jb

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METHOD BLANK/QC DATA

900

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8669 Extracted: 03/11/11											
LCS Analyzed: 03/14/2011 (S103013-03)						Source:					
Gross Alpha	107	3	N/A	pCi/L	101		106	70-130			
Gross Beta	86.8	4	N/A	pCi/L	87.2		100	70-130			
Blank Analyzed: 03/14/2011 (S103013-04)						Source:					
Gross Alpha	0.089	3	N/A	pCi/L			-				U
Gross Beta	0.136	4	N/A	pCi/L			-				U
Duplicate Analyzed: 03/14/2011 (S103013-05)						Source:					
Gross Alpha	1.44	3	N/A	pCi/L			-		32		Jb
Gross Beta	3.86	4	N/A	pCi/L			-		12		Jb

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METHOD BLANK/QC DATA

901.1

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8669 Extracted: 03/03/11											
LCS Analyzed: 03/08/2011 (S103013-03)						Source:					
Cobalt-60	123	10	N/A	pCi/L	126		98	80-120			
Cesium-137	116	20	N/A	pCi/L	110		106	80-120			
Blank Analyzed: 03/08/2011 (S103013-04)						Source:					
Cesium-137	ND	20	N/A	pCi/L			-				U
Potassium-40	ND	25	N/A	pCi/L			-				U
Duplicate Analyzed: 03/10/2011 (S103013-05)						Source:					
Cesium-137	ND	20	N/A	pCi/L			-		0		U
Potassium-40	ND	25	N/A	pCi/L			-		0		U

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METHOD BLANK/QC DATA

903.1

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8669 Extracted: 03/25/11											
LCS Analyzed: 03/25/2011 (S103013-03)											
Radium-226	59.5	1	N/A	pCi/L	55.7		107	80-120			
Blank Analyzed: 03/19/2011 (S103013-04)											
Radium-226	0.156	1	N/A	pCi/L				-			U
Duplicate Analyzed: 03/19/2011 (S103013-05)											
Radium-226	0.467	1	N/A	pCi/L				-	0		U

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METHOD BLANK/QC DATA

904

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8669 Extracted: 03/18/11											
LCS Analyzed: 03/18/2011 (S103013-03)											
Radium-228	16.1	1	N/A	pCi/L	15.1		107	60-140			
Blank Analyzed: 03/18/2011 (S103013-04)											
Radium-228	-0.11	1	N/A	pCi/L				-			U
Duplicate Analyzed: 03/18/2011 (S103013-05)											
Radium-228	0.062	1	N/A	pCi/L				-	0		U

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METHOD BLANK/QC DATA

905

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8669 Extracted: 03/15/11											
LCS Analyzed: 03/16/2011 (S103013-03)											
Strontium-90	20.3	2	N/A	pCi/L	17.4		117	80-120			
Blank Analyzed: 03/16/2011 (S103013-04)											
Strontium-90	-0.258	2	N/A	pCi/L				-			U
Duplicate Analyzed: 03/16/2011 (S103013-05)											
Strontium-90	-0.199	2	N/A	pCi/L				-	0		U

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906

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8669 Extracted: 03/19/11											
LCS Analyzed: 03/22/2011 (S103013-03)											
Tritium	2780	500	N/A	pCi/L	2940		95	80-120			
Blank Analyzed: 03/22/2011 (S103013-04)											
Tritium	-28	500	N/A	pCi/L							U
Duplicate Analyzed: 03/22/2011 (S103013-05)											
Tritium	-42.1	500	N/A	pCi/L					0		U

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METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1060411 Extracted: 03/01/11											
Blank Analyzed: 03/02/2011 (G1C010000411B)						Source:					
1,2,3,4,6,7,8-HpCDD	ND	0.00005	0.0000028	ug/L				-			
1,2,3,4,6,7,8-HpCDF	ND	0.00005	0.0000022	ug/L				-			
1,2,3,4,7,8,9-HpCDF	ND	0.00005	0.0000032	ug/L				-			
1,2,3,4,7,8-HxCDD	ND	0.00005	0.0000026	ug/L				-			
1,2,3,4,7,8-HxCDF	ND	0.00005	0.0000028	ug/L				-			
1,2,3,6,7,8-HxCDD	ND	0.00005	0.0000024	ug/L				-			
1,2,3,6,7,8-HxCDF	ND	0.00005	0.0000026	ug/L				-			
1,2,3,7,8,9-HxCDD	ND	0.00005	0.0000021	ug/L				-			
1,2,3,7,8,9-HxCDF	ND	0.00005	0.0000033	ug/L				-			
1,2,3,7,8-PeCDD	ND	0.00005	0.0000071	ug/L				-			
1,2,3,7,8-PeCDF	ND	0.00005	0.0000093	ug/L				-			
2,3,4,6,7,8-HxCDF	ND	0.00005	0.0000024	ug/L				-			
2,3,4,7,8-PeCDF	ND	0.00005	0.0000095	ug/L				-			
2,3,7,8-TCDD	ND	0.00001	0.0000095	ug/L				-			
2,3,7,8-TCDF	ND	0.00001	0.000003	ug/L				-			
OCDD	4.4e-006	0.0001	0.0000071	ug/L				-			J
OCDF	ND	0.0001	0.0000042	ug/L				-			
Total HpCDD	ND	0.00005	0.0000028	ug/L				-			
Total HpCDF	ND	0.00005	0.0000022	ug/L				-			
Total HxCDD	ND	0.00005	0.0000021	ug/L				-			
Total HxCDF	ND	0.00005	0.0000024	ug/L				-			
Total PeCDD	ND	0.00005	0.0000071	ug/L				-			
Total PeCDF	ND	0.00005	0.0000093	ug/L				-			
Total TCDD	ND	0.00001	0.0000095	ug/L				-			
Total TCDF	ND	0.00001	0.000003	ug/L				-			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.0018			ug/L	0.002		88	23-140			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.0021			ug/L	0.002		106	28-143			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.0021			ug/L	0.002		104	26-138			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.0017			ug/L	0.002		85	32-141			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.0019			ug/L	0.002		95	26-152			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.0018			ug/L	0.002		92	28-130			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.0018			ug/L	0.002		92	26-123			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.0019			ug/L	0.002		96	29-147			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.0016			ug/L	0.002		78	25-181			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.0017			ug/L	0.002		85	24-185			

TestAmerica Irvine

Debby Wilson
Project Manager

MWH-Pasadena/Boeing
 618 Michillinda Avenue, Suite 200
 Arcadia, CA 91007
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
 Routine Outfall 018
 Report Number: IUB2819

Sampled: 02/26/11-02/27/11
 Received: 02/26/11

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1060411 Extracted: 03/01/11											
Blank Analyzed: 03/02/2011 (G1C010000411B)						Source:					
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.002			ug/L	0.002		102	28-136			
Surrogate: 13C-2,3,4,7,8-PeCDF	0.0018			ug/L	0.002		89	21-178			
Surrogate: 13C-2,3,7,8-TCDD	0.0014			ug/L	0.002		71	25-164			
Surrogate: 13C-2,3,7,8-TCDF	0.0016			ug/L	0.002		82	24-169			
Surrogate: 13C-OCDD	0.0039			ug/L	0.004		97	17-157			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.00073			ug/L	0.0008		91	35-197			
LCS Analyzed: 03/02/2011 (G1C010000411C)						Source:					
1,2,3,4,6,7,8-HpCDD	0.00122	0.00005	0.0000078	ug/L	0.001		122	70-140			
1,2,3,4,6,7,8-HpCDF	0.0011	0.00005	0.000011	ug/L	0.001		110	82-122			
1,2,3,4,7,8,9-HpCDF	0.00112	0.00005	0.000016	ug/L	0.001		112	78-138			
1,2,3,4,7,8-HxCDD	0.00115	0.00005	0.000002	ug/L	0.001		115	70-164			
1,2,3,4,7,8-HxCDF	0.00121	0.00005	0.0000034	ug/L	0.001		121	72-134			
1,2,3,6,7,8-HxCDD	0.00113	0.00005	0.0000017	ug/L	0.001		113	76-134			
1,2,3,6,7,8-HxCDF	0.00124	0.00005	0.0000031	ug/L	0.001		124	84-130			
1,2,3,7,8,9-HxCDD	0.00117	0.00005	0.0000015	ug/L	0.001		117	64-162			
1,2,3,7,8,9-HxCDF	0.00129	0.00005	0.0000041	ug/L	0.001		129	78-130			
1,2,3,7,8-PeCDD	0.00128	0.00005	0.0000081	ug/L	0.001		128	70-142			
1,2,3,7,8-PeCDF	0.00122	0.00005	0.000016	ug/L	0.001		122	80-134			
2,3,4,6,7,8-HxCDF	0.00119	0.00005	0.0000028	ug/L	0.001		119	70-156			
2,3,4,7,8-PeCDF	0.00121	0.00005	0.000016	ug/L	0.001		121	68-160			
2,3,7,8-TCDD	0.000306	0.00001	0.0000093	ug/L	0.0002		153	67-158			
2,3,7,8-TCDF	0.000289	0.000013	0.000013	ug/L	0.0002		145	75-158			G
OCDD	0.00222	0.0001	0.000016	ug/L	0.002		111	78-144			Ba
OCDF	0.00258	0.0001	0.0000072	ug/L	0.002		129	63-170			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.00175			ug/L	0.002		88	26-166			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.00211			ug/L	0.002		105	21-158			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.00203			ug/L	0.002		102	20-186			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.00167			ug/L	0.002		84	21-193			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.00186			ug/L	0.002		93	19-202			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.00191			ug/L	0.002		96	25-163			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.00188			ug/L	0.002		94	21-159			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.002			ug/L	0.002		100	17-205			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.0016			ug/L	0.002		80	21-227			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.00175			ug/L	0.002		87	21-192			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.00207			ug/L	0.002		103	22-176			

TestAmerica Irvine

Debby Wilson
 Project Manager

MWH-Pasadena/Boeing
 618 Michillinda Avenue, Suite 200
 Arcadia, CA 91007
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
 Routine Outfall 018
 Report Number: IUB2819

Sampled: 02/26/11-02/27/11
 Received: 02/26/11

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1060411 Extracted: 03/01/11											
LCS Analyzed: 03/02/2011 (G1C010000411C)						Source:					
Surrogate: 13C-2,3,4,7,8-PeCDF	0.00182			ug/L	0.002		91	13-328			
Surrogate: 13C-2,3,7,8-TCDD	0.00155			ug/L	0.002		78	20-175			
Surrogate: 13C-2,3,7,8-TCDF	0.00177			ug/L	0.002		88	22-152			
Surrogate: 13C-OCDD	0.00377			ug/L	0.004		94	13-199			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.000729			ug/L	0.0008		91	31-191			
LCS Dup Analyzed: 03/02/2011 (G1C010000411L)						Source:					
1,2,3,4,6,7,8-HpCDD	0.00114	0.00005	0.0000082	ug/L	0.001		114	70-140	6.5	50	
1,2,3,4,6,7,8-HpCDF	0.00101	0.00005	0.0000011	ug/L	0.001		101	82-122	8.6	50	
1,2,3,4,7,8,9-HpCDF	0.00104	0.00005	0.0000016	ug/L	0.001		104	78-138	7.1	50	
1,2,3,4,7,8-HxCDD	0.00101	0.00005	0.0000021	ug/L	0.001		101	70-164	13	50	
1,2,3,4,7,8-HxCDF	0.00107	0.00005	0.0000035	ug/L	0.001		107	72-134	12	50	
1,2,3,6,7,8-HxCDD	0.00101	0.00005	0.0000019	ug/L	0.001		101	76-134	11	50	
1,2,3,6,7,8-HxCDF	0.00108	0.00005	0.0000032	ug/L	0.001		108	84-130	14	50	
1,2,3,7,8,9-HxCDD	0.00101	0.00005	0.0000017	ug/L	0.001		101	64-162	14	50	
1,2,3,7,8,9-HxCDF	0.00105	0.00005	0.0000044	ug/L	0.001		105	78-130	21	50	
1,2,3,7,8-PeCDD	0.00108	0.00005	0.0000083	ug/L	0.001		108	70-142	17	50	
1,2,3,7,8-PeCDF	0.00105	0.00005	0.0000012	ug/L	0.001		105	80-134	15	50	
2,3,4,6,7,8-HxCDF	0.00101	0.00005	0.0000032	ug/L	0.001		101	70-156	16	50	
2,3,4,7,8-PeCDF	0.00105	0.00005	0.0000013	ug/L	0.001		105	68-160	14	50	
2,3,7,8-TCDD	0.000224	0.00001	0.0000082	ug/L	0.0002		112	67-158	31	50	
2,3,7,8-TCDF	0.000213	0.000012	0.0000012	ug/L	0.0002		107	75-158	30	50	G
OCDD	0.00215	0.0001	0.0000011	ug/L	0.002		107	78-144	3.3	50	Ba
OCDF	0.00246	0.0001	0.0000079	ug/L	0.002		123	63-170	4.7	50	
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.00173			ug/L	0.002		86	26-166			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.0021			ug/L	0.002		105	21-158			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.00203			ug/L	0.002		102	20-186			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.00189			ug/L	0.002		94	21-193			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.00187			ug/L	0.002		94	19-202			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.00183			ug/L	0.002		92	25-163			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.00202			ug/L	0.002		101	21-159			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.00206			ug/L	0.002		103	17-205			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.00162			ug/L	0.002		81	21-227			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.00178			ug/L	0.002		89	21-192			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.00208			ug/L	0.002		104	22-176			
Surrogate: 13C-2,3,4,7,8-PeCDF	0.00184			ug/L	0.002		92	13-328			

TestAmerica Irvine

Debby Wilson
 Project Manager

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
Routine Outfall 018
Report Number: IUB2819

Sampled: 02/26/11-02/27/11
Received: 02/26/11

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1060411 Extracted: 03/01/11											
LCS Dup Analyzed: 03/02/2011 (G1C010000411L)											
Surrogate: 13C-2,3,7,8-TCDD	0.00157			ug/L	0.002		78	20-175			
Surrogate: 13C-2,3,7,8-TCDF	0.0018			ug/L	0.002		90	22-152			
Surrogate: 13C-OCDD	0.00381			ug/L	0.004		95	13-199			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.000707			ug/L	0.0008		88	31-191			

TestAmerica Irvine

Debby Wilson
Project Manager

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IUB2819 <Page 46 of 52>

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
Routine Outfall 018
Report Number: IUB2819

Sampled: 02/26/11-02/27/11
Received: 02/26/11

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
IUB2819-01	1664-HEM	Hexane Extractable Material (Oil & Greas	mg/l	0	4.8	15
IUB2819-01	624-(601list)	1,1-Dichloroethene	ug/l	0	2.0	6
IUB2819-01	624-(601list)	1,2-Dichloroethane	ug/l	0	0.50	0.5
IUB2819-01	624-(601list)	Trichloroethene	ug/l	0	2.0	5
IUB2819-01	Settleable Solids - SM2540F	Total Settleable Solids	ml/l	0	0.10	0.3

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
IUB2819-02	624-(601list)	1,1-Dichloroethene	ug/l	0	2.0	6
IUB2819-02	624-(601list)	1,2-Dichloroethane	ug/l	0	0.50	0.5
IUB2819-02	624-(601list)	Trichloroethene	ug/l	0	2.0	5

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
IUB2819-03	608-Pest Boeing 001/002 Q (LL)	alpha-BHC	ug/l	0.00076	0.0096	0.03
IUB2819-03	625-Boeing 001/002 Q-LL	2,4,6-Trichlorophenol	ug/l	0	5.74	13
IUB2819-03	625-Boeing 001/002 Q-LL	2,4-Dinitrotoluene	ug/l	0	4.78	18
IUB2819-03	625-Boeing 001/002 Q-LL	Bis(2-ethylhexyl)phthalate	ug/l	0.50	4.78	4
IUB2819-03	625-Boeing 001/002 Q-LL	N-Nitrosodimethylamine	ug/l	0	4.78	16
IUB2819-03	625-Boeing 001/002 Q-LL	Pentachlorophenol	ug/l	0	4.78	16.5
IUB2819-03	Ammonia-N, Titr 4500NH3-C (w/di	Ammonia-N (Distilled)	mg/l	0	0.500	10.1
IUB2819-03	BOD - SM5210B	Biochemical Oxygen Demand	mg/l	1.43	2.0	30
IUB2819-03	Cadmium-200.8	Cadmium	ug/l	0.049	1.0	3.1
IUB2819-03	Chloride - 300.0	Chloride	mg/l	11	0.50	150
IUB2819-03	Copper-200.8	Copper	ug/l	2.63	2.0	14
IUB2819-03	Cyanide, Total-4500CN-E (5ppb)	Total Cyanide	ug/l	-4	5.0	8.5
IUB2819-03	Iron-200.7	Iron	mg/l	0.74	0.040	0.3
IUB2819-03	Lead-200.8	Lead	ug/l	0.49	1.0	5.2
IUB2819-03	MBAS - SM5540C	Surfactants (MBAS)	mg/l	0.068	0.10	0.5
IUB2819-03	Mercury - 245.1	Mercury	ug/l	0	0.20	0.1
IUB2819-03	Nitrate-N, 300.0	Nitrate-N	mg/l	0.15	0.11	8

TestAmerica Irvine

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Project Manager

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 Routine Outfall 018
 Report Number: IUB2819

Sampled: 02/26/11-02/27/11
 Received: 02/26/11

IUB2819-03	Nitrite-N, 300.0	Nitrite-N	mg/l	0	0.15	1
IUB2819-03	Nitrogen, NO3+NO2 -N EPA 300.0	Nitrate/Nitrite-N	mg/l	0.15	0.26	8
IUB2819-03	Perchlorate 314.0 - Default	Perchlorate	ug/l	0.57	4.0	6
IUB2819-03	Selenium-200.8	Selenium	ug/l	0.24	2.0	5
IUB2819-03	Sulfate-300.0	Sulfate	mg/l	48	5.0	300
IUB2819-03	TDS - SM2540C	Total Dissolved Solids	mg/l	217	10	950
IUB2819-03	TSS - SM2540D	Total Suspended Solids	mg/l	8.00	10	45

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
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Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
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TestAmerica Irvine

Debby Wilson
 Project Manager

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
Routine Outfall 018
Report Number: IUB2819

Sampled: 02/26/11-02/27/11
Received: 02/26/11

DATA QUALIFIERS AND DEFINITIONS

- B** Analyte was detected in the associated Method Blank.
- B-1** Analyte was detected in the associated method blank. Analyte concentration in the sample is greater than 10x the concentration found in the method blank.
- Ba** Method blank contamination. The associated method blank contains the target analyte at a reportable level.
- G** Elevated reporting limit. The reporting limit is elevated due to matrix interference.
- J** Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
- Jb** The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
- MNR1** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- U** The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

TestAmerica Irvine

Debby Wilson
Project Manager

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IUB2819 <Page 49 of 52>

MWH-Pasadena/Boeing
 618 Michillinda Avenue, Suite 200
 Arcadia, CA 91007
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
 Routine Outfall 018
 Report Number: IUB2819

Sampled: 02/26/11-02/27/11
 Received: 02/26/11

Certification Summary

TestAmerica Irvine

Method	Matrix	Nelac	California
EDD + Level 4	Water	N/A	N/A
EPA 1664A	Water	X	X
EPA 200.7-Diss	Water	X	N/A
EPA 200.7	Water	X	N/A
EPA 200.8-Diss	Water	X	N/A
EPA 200.8	Water	X	N/A
EPA 245.1-Diss	Water	X	N/A
EPA 245.1	Water	X	N/A
EPA 300.0	Water	X	N/A
EPA 314.0	Water	X	N/A
EPA 608	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X
Filtration	Water	N/A	N/A
SM 2540D	Water	X	X
SM2130B	Water	X	X
SM2510B	Water	X	N/A
SM2540C	Water	X	N/A
SM2540F	Water	X	X
SM4500CN-E	Water	X	N/A
SM4500NH3-C	Water	X	X
SM5210B	Water	X	X
SM5540-C	Water	X	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for TestAmerica may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Subcontracted Laboratories

TestAmerica Irvine

Debby Wilson
 Project Manager

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
Routine Outfall 018
Report Number: IUB2819

Sampled: 02/26/11-02/27/11
Received: 02/26/11

Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: Gamma Spec
Samples: IUB2819-03, IUB2819-04

Analysis Performed: Gross Alpha
Samples: IUB2819-03, IUB2819-04

Analysis Performed: Gross Beta
Samples: IUB2819-03, IUB2819-04

Analysis Performed: Radium, Combined
Samples: IUB2819-03, IUB2819-04

Analysis Performed: Strontium 90
Samples: IUB2819-03, IUB2819-04

Analysis Performed: Tritium
Samples: IUB2819-03

Analysis Performed: Uranium, Combined
Samples: IUB2819-03, IUB2819-04

TestAmerica Buffalo

10 Hazelwood Drive, Suite 106 - Amherst, NY 14228

Method Performed: 8669
Samples: IUB2819-03, IUB2819-04

Method Performed: 900
Samples: IUB2819-03, IUB2819-04

Method Performed: 901.1
Samples: IUB2819-03, IUB2819-04

Method Performed: 903.1
Samples: IUB2819-03, IUB2819-04

Method Performed: 904
Samples: IUB2819-03, IUB2819-04

Method Performed: 905
Samples: IUB2819-03, IUB2819-04

Method Performed: 906
Samples: IUB2819-03

TestAmerica Irvine

Debby Wilson
Project Manager

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
Routine Outfall 018
Report Number: IUB2819

Sampled: 02/26/11-02/27/11
Received: 02/26/11

TestAmerica West Sacramento *NELAC Cert #1119CA, Nevada Cert #CA44*

880 Riverside Parkway - West Sacramento, CA 95605

Method Performed: EPA-5 1613B

Samples: IUB2819-03

TestAmerica Irvine

Debby Wilson
Project Manager

PRB

Client Name/Address: MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson				Project: Boeing-SSFL NPDES Routine Outfall 018 COMPOSITE			ANALYSIS REQUIRED														Comments			
Project Manager: Bronwyn Kelly Sampler: <i>R. Banaga</i>				Phone Number: (626) 568-6691 Fax Number: (626) 568-6515			Total Dissolved Metals: Cu, Pb, Hg, Cd, Se, Zn, Fe, Mn Gross Alpha(900.0), Gross Beta(900.0), Tritium (H-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) Chronic Toxicity Cyanide																	
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #																		
Outfall 018	W	1L Poly	1	<i>2-27-2011 08:38</i>	None	16		X															Filter w/in 24hrs of receipt at lab	
Outfall 018	W	2.5 Gal Cube	1	<i>2-27-2011 08:38</i>	None	17A		X															Unfiltered and unpreserved analysis	
		500 mL Amber	1		None	17B																		
Outfall 018	W	1 Gal Cube	1		None	18																	Only test if first or second rain events of the year	
Outfall 018	W	500 mL Poly	1	<i>2-27-2011 08:38</i>	NaOH	19			X															

PRB

COC Page 2 of 3 and Page 3 of 3 are the composite samples for Outfall 018 for this storm event.

These must be added to the same work order for COC Page 1 of 3 for Outfall 018 for the same event.

Relinquished By: <i>R. Banaga</i> Date/Time: <i>2-27-2011 10:30</i>	Received By: <i>Matt Camp</i> Date/Time: <i>2-27-11 10:30</i>	Turn-around time: (Check) 24 Hour: ___ 72 Hour: ___ 10 Day: ___ 48 Hour: ___ 5 Day: ___ Normal: <input checked="" type="checkbox"/>
Relinquished By: <i>Matt Camp</i> Date/Time: <i>2-27-11 13:45</i>	Received By: <i>Matt Camp</i> Date/Time:	Sample Integrity: (Check) Intact: <input checked="" type="checkbox"/> On Ice: <input checked="" type="checkbox"/>
Relinquished By: <i>Matt Camp</i> Date/Time:	Received By: <i>Matt Camp</i> Date/Time: <i>2/27/11 13:45</i>	Data Requirements: (Check) No Level IV: ___ All Level IV: ___ NPDES Level IV: <input checked="" type="checkbox"/>

27mol 28



EBERLINE

SERVICES

EBERLINE ANALYTICAL CORPORATION
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Richmond, California 94804-3849
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Toll Free (800) 841-5487
www.eberlineservices.com

March 31, 2011

Ms. Debby Wilson
Test America Irvine
17461 Derian Ave., Ste. 100
Irvine, CA 92614

**Reference: Test America-Irvine IUB2819
Eberline Analytical Report S103017-8669
Sample Delivery Group 8669**

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for two water samples received under Test America Job No. IUB2819. The samples were received on March 1, 2011.

Please call me, if you have any questions concerning the enclosed report.

Sincerely,

N. Joseph Verville
Client Services Manager

NJV/ljb

Enclosure: Level IV CLP-like Data Package CD

1.0 General Comments

Sample delivery group 8669 consists of the analytical results and supporting documentation for two water samples. Sample ID's and reference dates/times are given in the Sample Summary section of the Summary Data report. The sample was received as stated on the chain-of-custody document. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. No holding times were exceeded.

Tritium and gamma analyses were performed on the sample as received i.e. the sample was not filtered. The analytical volumes for all other analyses were subjected to a full nitric acid/hydrofluoric acid dissolution, and analyses were performed on the dissolution volumes.

2.0 Quality Control

Samples IUB2819-03 and IUB2819-04 (Trip Blank) were analyzed in a common prep batch with other outfall samples from this project. The QC samples from that common prep batch were assigned to SDG 8665 and are reported herein. Quality Control Samples consisted of laboratory control samples (LCS), method blanks, duplicate analyses and matrix spike analyses. Included in the data package are copies of the Eberline Analytical radiometrics data sheets. The radiometrics data sheets for the QC LCS and QC blank samples indicate Eberline Analytical's standard QC aliquot of 1.0 sample; results for those QC types are calculated as pCi/sample. The QC LCS and QC blank sample results reported in the Summary Data Section have been divided by the appropriate method specific aliquot (see the Lab Method Summaries for specific aliquots) in order to make the results comparable to the field sample results. All QC sample results were within required control limits.

3.0 Method Errors

The error for each result is an estimate of the significant random uncertainties incurred in the measurement process. These are propagated to each final result. They include the counting (Poisson) uncertainty, as well as those intrinsic errors due to carrier or tracer standardization, aliquoting, counter efficiencies, weights, or volumes. The following method errors were propagated to the count error to calculate the 2σ error (Total):

Analysis	Method Error
Gross alpha	20.6%
Gross beta	11.0%
Tritium	10.0%
Sr-90	10.4%
Ra-226	16.4%
Ra-228	10.4%
Uranium, Total	
Gamma Spec.	7.0%

4.0 Analysis Notes

- 4.1 **Gross Alpha/Gross Beta Analysis** – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.2 **Tritium Analysis** – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.3 **Strontium-90 Analysis** – No other problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.4 **Radium-226 Analysis** - The initial Ra-226 QC LCS recovery was less than the lower control limit of 80% therefore the LCS was re-emanated and recounted. The LCS recovery after the rework was within control limits and is reported herein. No other problems were encountered during the processing of the samples.
- 4.5 **Radium-228 Analysis** - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.6 **Total Uranium Analysis** - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.7 **Gamma Spectroscopy** – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

5.0 Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."



N. Joseph Verville
Client Services Manager

3/31/11

Date

E B E R L I N E A N A L Y T I C A L
SDG 8669

SDG 8669
Contact N. Joseph Verville

Client Test America, Inc.
Contract IUB2819

S U M M A R Y D A T A S E C T I O N

T A B L E O F C O N T E N T S				
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UB

Prepared by

N. Joseph Verville

Reviewed by

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-TOC
Version 3.06
Report date 03/30/11

EBERLINE ANALYTICAL

SDG 8669

SDG 8669
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract IUB2819

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DUPLICATES

REPORT GUIDES

Page 1

SUMMARY DATA SECTION

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Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 03/30/11

EBERLINE ANALYTICAL

SDG 8669

SDG 8669
Contact N. Joseph Verville

GUIDE , c o n t .

Client Test America, Inc.
Contract IUB2819

ABOUT THE DATA SUMMARY SECTION

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

REPORT GUIDES

Page 2

SUMMARY DATA SECTION

Page 2

Lab id EAS
Protocol TA
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EBERLINE ANALYTICAL

SDG 8669

LAB SAMPLE SUMMARY

SDG 8669
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract IUB2819

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF CUSTODY	COLLECTED
S103013-03	Lab Control Sample		WATER				
S103013-04	Method Blank		WATER				
S103013-05	Duplicate (S103013-01)	Boeing - SSFL	WATER				02/26/11 20:26
S103017-01	IUB2819-03	Boeing - SSFL	WATER			IUB2819	02/27/11 08:38
S103017-02	IUB2819-04 (TRIP-BLANK)		WATER			IUB2819	02/27/11 10:30

LAB SUMMARY

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SUMMARY DATA SECTION

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EBERLINE ANALYTICAL

SDG 8669

SDG 8669
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract IUB2819

QC SUMMARY

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% MOIST	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
8665		Method Blank	WATER						S103013-04	8665-004
		Lab Control Sample	WATER						S103013-03	8665-003
		Duplicate (S103013-01)	WATER		10.0 L		03/01/11	3	S103013-05	8665-005
8669	IUB2819	IUB2819-03	WATER		10.0 L		03/01/11	2	S103017-01	8669-001
		IUB2819-04 (TRIP-BLANK)	WATER		10.0 L		03/01/11	2	S103017-02	8669-002

QC SUMMARY

Page 1

SUMMARY DATA SECTION

Page 4

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-QS
 Version 3.06
 Report date 03/30/11

EBERLINE ANALYTICAL

SDG 8669

SDG 8669
 Contact N. Joseph Verville

PREP BATCH SUMMARY

Client Test America, Inc.
 Contract IUB2819

TEST	MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED				QUALI- FIERS	
			BATCH	2σ %	CLIENT	MORE	RE	BLANK		LCS
Beta Counting										
AC	WATER	Radium-228 in Water	7281-046	10.4	2			1	1	1/0/1
SR	WATER	Strontium-90 in Water	7281-046	10.4	2			1	1	1/0/1
Gas Proportional Counting										
80A	WATER	Gross Alpha in Water	7281-046	20.6	2			1	1	1/0/1
80B	WATER	Gross Beta in Water	7281-046	11.0	2			1	1	1/0/1
Gamma Spectroscopy										
GAM	WATER	Gamma Emitters in Water	7281-046	7.0	2			1	1	1/0/1
Kinetic Phosphorimetry, ug										
U_T	WATER	Uranium, Total	7281-046		2			1	1	1/0/1
Liquid Scintillation Counting										
H	WATER	Tritium in Water	7281-046	10.0	1			1	1	1/0/1
Radon Counting										
RA	WATER	Radium-226 in Water	7281-046	16.4	2			1	1	1/0/1

Blank, LCS, Duplicate and Spike planchets are those in the same preparation batch as some Client sample.
 In counts like 'a/b/c', 'a' = QC planchets, 'b' = Originals in this SDG, 'c' = Originals in other SDGs.

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-PBS
 Version 3.06
 Report date 03/30/11

EBERLINE ANALYTICAL

SDG 8669

LAB WORK SUMMARY

SDG 8669
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract IUB2819

LAB SAMPLE	CLIENT SAMPLE ID									
COLLECTED	LOCATION	MATRIX			SUF-					
RECEIVED	CUSTODY	SAS no	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD	
S103013-03	Lab Control Sample	WATER	8665-003	80A/80		03/14/11	03/15/11	BW	Gross Alpha in Water	
			8665-003	80B/80		03/14/11	03/15/11	BW	Gross Beta in Water	
			8665-003	AC		03/18/11	03/21/11	BW	Radium-228 in Water	
			8665-003	GAM		03/08/11	03/15/11	MWT	Gamma Emitters in Water	
			8665-003	H		03/22/11	03/25/11	BW	Tritium in Water	
			8665-003	RA	R1	03/25/11	03/28/11	BW	Radium-226 in Water	
			8665-003	SR		03/16/11	03/22/11	BW	Strontium-90 in Water	
			8665-003	U_T		03/15/11	03/16/11	BW	Uranium, Total	
S103013-04	Method Blank	WATER	8665-004	80A/80		03/14/11	03/15/11	BW	Gross Alpha in Water	
			8665-004	80B/80		03/14/11	03/15/11	BW	Gross Beta in Water	
			8665-004	AC		03/18/11	03/21/11	BW	Radium-228 in Water	
			8665-004	GAM		03/08/11	03/15/11	MWT	Gamma Emitters in Water	
			8665-004	H		03/22/11	03/25/11	BW	Tritium in Water	
			8665-004	RA		03/19/11	03/28/11	BW	Radium-226 in Water	
			8665-004	SR		03/16/11	03/22/11	BW	Strontium-90 in Water	
			8665-004	U_T		03/15/11	03/16/11	BW	Uranium, Total	
S103013-05	Duplicate (S103013-01) 02/26/11 Boeing - SSFL 03/01/11	WATER	8665-005	80A/80		03/14/11	03/15/11	BW	Gross Alpha in Water	
			8665-005	80B/80		03/14/11	03/15/11	BW	Gross Beta in Water	
			8665-005	AC		03/18/11	03/21/11	BW	Radium-228 in Water	
			8665-005	GAM		03/10/11	03/15/11	MWT	Gamma Emitters in Water	
			8665-005	H		03/22/11	03/25/11	BW	Tritium in Water	
			8665-005	RA		03/19/11	03/28/11	BW	Radium-226 in Water	
			8665-005	SR		03/16/11	03/22/11	BW	Strontium-90 in Water	
			8665-005	U_T		03/15/11	03/16/11	BW	Uranium, Total	
S103017-01	IUB2819-03 02/27/11 Boeing - SSFL 03/01/11 IUB2819	WATER	8669-001	80A/80		03/15/11	03/15/11	BW	Gross Alpha in Water	
			8669-001	80B/80		03/15/11	03/15/11	BW	Gross Beta in Water	
			8669-001	AC		03/18/11	03/21/11	BW	Radium-228 in Water	
			8669-001	GAM		03/11/11	03/15/11	MWT	Gamma Emitters in Water	
			8669-001	H		03/22/11	03/25/11	BW	Tritium in Water	
			8669-001	RA		03/19/11	03/28/11	BW	Radium-226 in Water	
			8669-001	SR		03/16/11	03/22/11	BW	Strontium-90 in Water	
			8669-001	U_T		03/15/11	03/16/11	BW	Uranium, Total	

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LWS
 Version 3.06
 Report date 03/30/11

EBERLINE ANALYTICAL

SDG 8669

WORK SUMMARY, cont.

SDG 8669
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract IUB2819

LAB SAMPLE	CLIENT SAMPLE ID									
COLLECTED	LOCATION	MATRIX		SUF-						
RECEIVED	CUSTODY	SAS no	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD	
S103017-02	IUB2819-04 (TRIP-BLANK)		8669-002	80A/80		03/15/11	03/15/11	BW	Gross Alpha in Water	
02/27/11		WATER	8669-002	80B/80		03/15/11	03/15/11	BW	Gross Beta in Water	
03/01/11	IUB2819		8669-002	AC		03/18/11	03/21/11	BW	Radium-228 in Water	
			8669-002	GAM		03/11/11	03/15/11	MWT	Gamma Emitters in Water	
			8669-002	RA		03/19/11	03/28/11	BW	Radium-226 in Water	
			8669-002	SR		03/16/11	03/22/11	BW	Strontium-90 in Water	
			8669-002	U_T		03/15/11	03/16/11	BW	Uranium, Total	

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAS no	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
80A/80		Gross Alpha in Water	900.0	2			1	1	1	5
80B/80		Gross Beta in Water	900.0	2			1	1	1	5
AC		Radium-228 in Water	904.0	2			1	1	1	5
GAM		Gamma Emitters in Water	901.1	2			1	1	1	5
H		Tritium in Water	906.0	1			1	1	1	4
RA		Radium-226 in Water	903.1	2			1	1	1	5
SR		Strontium-90 in Water	905.0	2			1	1	1	5
U_T		Uranium, Total	D5174	2			1	1	1	5
TOTALS				15			8	8	8	39

WORK SUMMARY

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SUMMARY DATA SECTION

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Lab id EAS
 Protocol TA
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 Form DVD-LWS
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 Report date 03/30/11

EBERLINE ANALYTICAL
SDG 8669

8665-004

Method Blank

METHOD BLANK

SDG 8669
Contact N. Joseph Verville

Client Test America, Inc.
Contract IUB2819

Lab sample id S103013-04
Dept sample id 8665-004

Client sample id Method Blank
Material/Matrix _____ WATER

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	0.089	0.90	1.62	3.00	U	80A
Gross Beta	12587472	0.136	1.7	2.78	4.00	U	80B
Tritium	10028178	-28.0	98	167	500	U	H
Radium-226	13982633	0.156	0.38	0.661	1.00	U	RA
Radium-228	15262201	-0.110	0.17	0.430	1.00	U	AC
Strontium-90	10098972	-0.258	0.38	1.04	2.00	U	SR
Uranium, Total		0	0.010	0.022	1.00	U	U_T
Potassium-40	13966002	U		23.0	25.0	U	GAM
Cesium-137	10045973	U		1.53	20.0	U	GAM

QC-BLANK #77580

METHOD BLANKS

Page 1

SUMMARY DATA SECTION

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Lab id	<u>EAS</u>
Protocol	<u>TA</u>
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Report date	<u>03/30/11</u>

EBERLINE ANALYTICAL

SDG 8669

8665-005

IUB2814-03

DUPLICATE

SDG <u>8669</u>		Client <u>Test America, Inc.</u>
Contact <u>N. Joseph Verville</u>		Contract <u>IUB2819</u>
DUPLICATE	ORIGINAL	
Lab sample id <u>S103013-05</u>	Lab sample id <u>S103013-01</u>	Client sample id <u>IUB2814-03</u>
Dept sample id <u>8665-005</u>	Dept sample id <u>8665-001</u>	Location/Matrix <u>Boeing - SSPL</u> <u>WATER</u>
	Received <u>03/01/11</u>	Collected/Volume <u>02/26/11 20:26</u> <u>10.0 L</u>
		Chain of custody id <u>IUB2814</u>

ANALYTE	DUPLICATE	2σ ERR	MDA	RDL	QUALI-	ORIGINAL	2σ ERR	MDA	QUALI-	RPD	3σ	DER
	pCi/L	(COUNT)	pCi/L	pCi/L	FIERS TEST		pCi/L	(COUNT)	pCi/L	FIERS	%	TOT
Gross Alpha	1.44	0.58	0.572	3.00	J 80A	1.04	0.53	0.645	J	32	105	0.9
Gross Beta	3.86	0.91	1.35	4.00	J 80B	4.34	0.69	0.934		12	48	0.7
Tritium	-42.1	99	170	500	U H	-106	98	172	U	-		0.9
Radium-226	0.467	0.39	0.618	1.00	U RA	0.436	0.36	0.562	U	-		0.1
Radium-228	0.062	0.16	0.406	1.00	U AC	0.016	0.17	0.421	U	-		0.4
Strontium-90	-0.199	0.43	1.10	2.00	U SR	-0.031	0.62	1.35	U	-		0.4
Uranium, Total	0.574	0.065	0.022	1.00	J U_T	0.618	0.070	0.022	J	7	24	0.9
Potassium-40	U		24.8	25.0	U GAM	U		19.0	U	-		0.4
Cesium-137	U		1.52	20.0	U GAM	U		1.67	U	-		0.1

QC-DUP#1 77581

DUPLICATES

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SUMMARY DATA SECTION

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Version <u>Ver 1.0</u>
Form <u>DVD-DUP</u>
Version <u>3.06</u>
Report date <u>03/30/11</u>

EBERLINE ANALYTICAL

SDG 8669

8669-001

IUB2819-03

DATA SHEET

SDG <u>8669</u>	Client <u>Test America, Inc.</u>
Contact <u>N. Joseph Verville</u>	Contract <u>IUB2819</u>
Lab sample id <u>S103017-01</u>	Client sample id <u>IUB2819-03</u>
Dept sample id <u>8669-001</u>	Location/Matrix <u>Boeing - SSFL</u> <u>WATER</u>
Received <u>03/01/11</u>	Collected/Volume <u>02/27/11 08:38</u> <u>10.0 L</u>
	Chain of custody id <u>IUB2819</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	0.345	0.34	0.516	3.00	U	80A
Gross Beta	12587472	3.10	0.70	1.02	4.00	J	80B
Tritium	10028178	-78.4	99	170	500	U	H
Radium-226	13982633	0.688	0.38	0.529	1.00	J	RA
Radium-228	15262201	-0.030	0.19	0.462	1.00	U	AC
Strontium-90	10098972	-0.256	0.37	0.999	2.00	U	SR
Uranium, Total		0.322	0.037	0.022	1.00	J	U_T
Potassium-40	13966002	U		24.3	25.0	U	GAM
Cesium-137	10045973	U		1.69	20.0	U	GAM

Lab id <u>EAS</u>
Protocol <u>TA</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>03/30/11</u>

EBERLINE ANALYTICAL

SDG 8669

8669-002

IUB2819-04 (TRIP-BLANK)

DATA SHEET

SDG <u>8669</u>	Client <u>Test America, Inc.</u>
Contact <u>N. Joseph Verville</u>	Contract <u>IUB2819</u>
Lab sample id <u>S103017-02</u>	Client sample id <u>IUB2819-04 (TRIP-BLANK)</u>
Dept sample id <u>8669-002</u>	Location/Matrix <u>WATER</u>
Received <u>03/01/11</u>	Collected/Volume <u>02/27/11 10:30 10.0 L</u>
	Chain of custody id <u>IUB2819</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	0.033	0.14	0.297	3.00	U	80A
Gross Beta	12587472	-0.466	0.43	0.760	4.00	U	80B
Radium-226	13982633	-0.046	0.34	0.652	1.00	U	RA
Radium-228	15262201	-0.065	0.17	0.411	1.00	U	AC
Strontium-90	10098972	0.046	0.37	0.853	2.00	U	SR
Uranium, Total		0	0.010	0.022	1.00	U	U_T
Potassium-40	13966002	U		24.8	25.0	U	GAM
Cesium-137	10045973	U		1.19	20.0	U	GAM

Lab id <u>EAS</u>
Protocol <u>TA</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>03/30/11</u>

EBERLINE ANALYTICAL

SDG 8669

LAB METHOD SUMMARY

RADIUM-228 IN WATER
BETA COUNTING

Test AC Matrix WATER
SDG 8669
Contact N. Joseph Verville

Client Test America, Inc.
Contract IUB2819

RESULTS

LAB RAW SUF-
SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Radium-228

Preparation batch 7281-046

Table with 5 columns: Sample ID, Test Fix, Planchet, Client Sample ID, and Radium-228. Rows include S103013-03 (Lab Control Sample), S103013-04 (Method Blank), S103013-05 (Duplicate), S103017-01 (IUB2819-03), and S103017-02 (IUB2819-04 (TRIP-BLANK)).

Nominal values and limits from method RDLs (pCi/L) 1.00

METHOD PERFORMANCE

LAB RAW SUF- MDA ALIQ PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-
SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/L L FAC TION % % min keV KeV HELD PREPARED YZED DETECTOR

Preparation batch 7281-046 2σ prep error 10.4 % Reference Lab Notebook No. 7281 pg 046

Table with 12 columns: Sample ID, Test Fix, Client Sample ID, MDA (pCi/L), Aliq (L), Prep Fac, Dilution, Yield (%), Efficiency (%), Count (min), FWHM (keV), Drift (KeV), Days Held, Prepared, YZED, and Detector. Rows include S103013-03 (Lab Control Sample), S103013-04 (Method Blank), S103013-05 (Duplicate), S103017-01 (IUB2819-03), and S103017-02 (IUB2819-04 (TRIP-BLANK)).

Nominal values and limits from method 1.00 1.80 30-105 50 180

PROCEDURES REFERENCE 904.0
DWP-894 Sequential Separation of Actinium-228 and Radium-226 in Drinking Water (>1 Liter Aliquot), rev 5

AVERAGES ± 2 SD MDA 0.428 ± 0.044
FOR 5 SAMPLES YIELD 79 ± 3

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 03/30/11

EBERLINE ANALYTICAL

SDG 8669

LAB METHOD SUMMARY

STRONTIUM-90 IN WATER
BETA COUNTING

Test SR Matrix WATER
SDG 8669
Contact N. Joseph Verville

Client Test America, Inc.
Contract IUB2819

RESULTS

LAB	RAW	SUF-		
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Strontium-90

Preparation batch 7281-046

S103013-03	8665-003	Lab Control Sample	ok
S103013-04	8665-004	Method Blank	U
S103013-05	8665-005	Duplicate (S103013-01)	- U
S103017-01	8669-001	IUB2819-03	U
S103017-02	8669-002	IUB2819-04 (TRIP-BLANK)	U

Nominal values and limits from method RDLs (pCi/L) 2.00

METHOD PERFORMANCE

LAB	RAW	SUF-		MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID		pCi/L	L	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR

Preparation batch 7281-046 2σ prep error 10.4 % Reference Lab Notebook No. 7281 pg 046

S103013-03	Lab Control Sample	0.961	0.500	76	50								03/15/11	03/16	GRB-229
S103013-04	Method Blank	1.04	0.500	82	50								03/15/11	03/16	GRB-230
S103013-05	Duplicate (S103013-01)	1.10	0.500	84	50					18			03/15/11	03/16	GRB-231
S103017-01	IUB2819-03	0.999	0.500	85	50					17			03/16/11	03/16	GRB-232
S103017-02	IUB2819-04 (TRIP-BLANK)	0.853	0.500	83	50					17			03/16/11	03/16	GRB-230

Nominal values and limits from method 2.00 0.500 30-105 50 180

PROCEDURES REFERENCE 905.0
DWP-380 Strontium in Drinking Water, rev 8

AVERAGES ± 2 SD MDA 0.991 ± 0.185
FOR 5 SAMPLES YIELD 82 ± 7

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 03/30/11

EBERLINE ANALYTICAL

SDG 8669

LAB METHOD SUMMARY

GROSS ALPHA IN WATER
GAS PROPORTIONAL COUNTING

Test 80A Matrix WATER
SDG 8669
Contact N. Joseph Verville

Client Test America, Inc.
Contract IUB2819

RESULTS

LAB	RAW	SUF-			
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha	
Preparation batch 7281-046					
S103013-03	80	8665-003	Lab Control Sample	ok	
S103013-04	80	8665-004	Method Blank	U	
S103013-05	80	8665-005	Duplicate (S103013-01)	ok J	
S103017-01	80	8669-001	IUB2819-03	U	
S103017-02	80	8669-002	IUB2819-04 (TRIP-BLANK)	U	
Nominal values and limits from method			RDLs (pCi/L)	3.00	

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	RESID	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	mg	%	min	keV	KeV	HELD PREPARED	YZED DETECTOR
Preparation batch 7281-046 2σ prep error 20.6 % Reference Lab Notebook No. 7281 pg 046													
S103013-03	80	Lab Control Sample	1.56	0.100			59	400				03/11/11	03/14 GRB-104
S103013-04	80	Method Blank	1.62	0.100			58	400				03/11/11	03/14 GRB-105
S103013-05	80	Duplicate (S103013-01)	0.572	0.300			91	400			16	03/11/11	03/14 GRB-107
S103017-01	80	IUB2819-03	0.516	0.300			59	400			16	03/11/11	03/15 GRB-103
S103017-02	80	IUB2819-04 (TRIP-BLANK)	0.297	0.300			0	400			16	03/11/11	03/15 GRB-104
Nominal values and limits from method			3.00	0.100			0-200	100			180		

PROCEDURES REFERENCE 900.0
DWP-121 Gross Alpha and Gross Beta in Drinking Water,
rev 10

AVERAGES ± 2 SD MDA 0.913 ± 1.25
FOR 5 SAMPLES RESIDUE 53 ± 66

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 03/30/11

EBERLINE ANALYTICAL

SDG 8669

LAB METHOD SUMMARY

GROSS BETA IN WATER

GAS PROPORTIONAL COUNTING

Test 80B Matrix WATER
 SDG 8669
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract IUB2819

RESULTS

LAB	RAW	SUF-		
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
Preparation batch 7281-046				
S103013-03	80	8665-003	Lab Control Sample	ok
S103013-04	80	8665-004	Method Blank	U
S103013-05	80	8665-005	Duplicate (S103013-01)	ok J
S103017-01	80	8669-001	IUB2819-03	3.10 J
S103017-02	80	8669-002	IUB2819-04 (TRIP-BLANK)	U

Nominal values and limits from method RDLs (pCi/L) 4.00

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	RESID	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	mg	%	min	keV	KeV	HELD PREPARED	YZED DETECTOR
Preparation batch 7281-046 2σ prep error 11.0 % Reference Lab Notebook No. 7281 pg 046													
S103013-03	80	Lab Control Sample	2.39	0.100			59	400				03/11/11	03/14 GRB-104
S103013-04	80	Method Blank	2.78	0.100			58	400				03/11/11	03/14 GRB-105
S103013-05	80	Duplicate (S103013-01)	1.35	0.300			91	400				16 03/11/11	03/14 GRB-107
S103017-01	80	IUB2819-03	1.02	0.300			59	400				16 03/11/11	03/15 GRB-103
S103017-02	80	IUB2819-04 (TRIP-BLANK)	0.760	0.300			0	400				16 03/11/11	03/15 GRB-104

Nominal values and limits from method 4.00 0.100 0-200 100 180

PROCEDURES REFERENCE 900.0
 DWP-121 Gross Alpha and Gross Beta in Drinking Water,
 rev 10

AVERAGES ± 2 SD MDA 1.66 ± 1.76
 FOR 5 SAMPLES RESIDUE 53 ± 66

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
 Report date 03/30/11

EBERLINE ANALYTICAL

SDG 8669

LAB METHOD SUMMARY

GAMMA EMITTERS IN WATER
GAMMA SPECTROSCOPY

Test GAM Matrix WATER
SDG 8669
Contact N. Joseph Verville

Client Test America, Inc.
Contract IUB2819

RESULTS

LAB	RAW	SUF-			
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt-60	Cesium-137
Preparation batch 7281-046					
S103013-03		8665-003	Lab Control Sample	ok	ok
S103013-04		8665-004	Method Blank		U
S103013-05		8665-005	Duplicate (S103013-01)		- U
S103017-01		8669-001	IUB2819-03		U
S103017-02		8669-002	IUB2819-04 (TRIP-BLANK)		U

Nominal values and limits from method RDLs (pCi/L) 10.0 20.0

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-		
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7281-046 2σ prep error 7.0 % Reference Lab Notebook No. 7281 pg 046															
S103013-03		Lab Control Sample	2.00						508				03/03/11	03/08	01,02,00
S103013-04		Method Blank	2.00						508				03/03/11	03/08	01,04,00
S103013-05		Duplicate (S103013-01)	2.00						402			12	03/03/11	03/10	01,03,00
S103017-01		IUB2819-03	2.00						427			12	03/03/11	03/11	01,03,00
S103017-02		IUB2819-04 (TRIP-BLANK)	2.00						807			12	03/03/11	03/11	01,02,00

Nominal values and limits from method 6.00 2.00 400 180

PROCEDURES REFERENCE 901.1
DWP-100 Preparation of Drinking Water Samples for Gamma Spectroscopy, rev 5

METHOD SUMMARIES

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EBERLINE ANALYTICAL

SDG 8669

LAB METHOD SUMMARY

URANIUM, TOTAL

KINETIC PHOSPHORIMETRY, UG

Test U T Matrix WATER
 SDG 8669
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract IUB2819

RESULTS

LAB	RAW	SUF-		Uranium,
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Total
Preparation batch 7281-046				
S103013-03		8665-003	Lab Control Sample	ok
S103013-04		8665-004	Method Blank	U
S103013-05		8665-005	Duplicate (S103013-01)	ok J
S103017-01		8669-001	IUB2819-03	0.322 J
S103017-02		8669-002	IUB2819-04 (TRIP-BLANK)	U

Nominal values and limits from method RDLs (pCi/L) 1.00

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-		
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7281-046			2σ prep error		Reference Lab Notebook No. 7281 pg 046										
S103013-03		Lab Control Sample	0.223	0.0200								03/15/11	03/15	KPA-001	
S103013-04		Method Blank	0.022	0.0200								03/15/11	03/15	KPA-001	
S103013-05		Duplicate (S103013-01)	0.022	0.0200					17			03/15/11	03/15	KPA-001	
S103017-01		IUB2819-03	0.022	0.0200					16			03/15/11	03/15	KPA-001	
S103017-02		IUB2819-04 (TRIP-BLANK)	0.022	0.0200					16			03/15/11	03/15	KPA-001	

Nominal values and limits from method 1.00 0.0200 180

PROCEDURES REFERENCE D5174

AVERAGES ± 2 SD MDA 0.062 ± 0.180
 FOR 5 SAMPLES YIELD _____ ± _____

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
 Report date 03/30/11

EBERLINE ANALYTICAL

SDG 8669

LAB METHOD SUMMARY

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Test H Matrix WATER
SDG 8669
Contact N. Joseph Verville

Client Test America, Inc.
Contract IUB2819

RESULTS

LAB RAW SUF-
SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Tritium

Table with 5 columns: SAMPLE ID, TEST FIX, PLANCHET, CLIENT SAMPLE ID, Tritium. Rows include preparation batch 7281-046 and samples S103013-03 through S103017-01.

Nominal values and limits from method RDLs (pCi/L) 500

METHOD PERFORMANCE

LAB RAW SUF- MDA ALIQ PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-
SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/L L FAC TION % % min keV KeV HELD PREPARED YZED DETECTOR

Table with 12 columns: SAMPLE ID, TEST FIX, CLIENT SAMPLE ID, MDA pCi/L, ALIQ L, PREP FAC, DILUTION, YIELD %, EFF %, COUNT min, FWHM keV, DRIFT KeV, HELD, PREPARED YZED, DETECTOR. Includes preparation batch 7281-046 and samples S103013-03 through S103017-01.

Nominal values and limits from method 500 0.0100 100 180

PROCEDURES REFERENCE 906.0
DWP-212 Tritium in Drinking Water by Distillation, rev 8

AVERAGES + 2 SD MDA 169 + 3.00
FOR 4 SAMPLES YIELD 55 + 104

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 03/30/11

EBERLINE ANALYTICAL

SDG 8669

LAB METHOD SUMMARY

RADIUM-226 IN WATER
RADON COUNTING

Test RA Matrix WATER
SDG 8669
Contact N. Joseph Verville

Client Test America, Inc.
Contract IUB2819

RESULTS

LAB	RAW	SUF-			
SAMPLE ID	TEST	FIX	PLANCHET	CLIENT SAMPLE ID	Radium-226
Preparation batch 7281-046					
S103013-03	R1		8665-003	Lab Control Sample	ok
S103013-04			8665-004	Method Blank	U
S103013-05			8665-005	Duplicate (S103013-01)	- U
S103017-01			8669-001	IUB2819-03	0.688 J
S103017-02			8669-002	IUB2819-04 (TRIP-BLANK)	U

Nominal values and limits from method RDLs (pCi/L) 1.00

METHOD PERFORMANCE

LAB	RAW	SUF-		MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST	FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7281-046 2σ prep error 16.4 % Reference Lab Notebook No. 7281 pg 046																
S103013-03	R1		Lab Control Sample	0.867	0.100			100		140				03/25/11	03/25	RN-009
S103013-04			Method Blank	0.661	0.100			100		103				03/19/11	03/19	RN-010
S103013-05			Duplicate (S103013-01)	0.618	0.100			100		103			21	03/19/11	03/19	RN-016
S103017-01			IUB2819-03	0.529	0.100			100		100			20	03/19/11	03/19	RN-013
S103017-02			IUB2819-04 (TRIP-BLANK)	0.652	0.100			100		100			20	03/19/11	03/19	RN-014

Nominal values and limits from method 1.00 0.100 100 180

PROCEDURES REFERENCE 903.1
DWP-881A Ra-226 Screening in Drinking Water, rev 6

AVERAGES ± 2 SD MDA 0.665 ± 0.248
FOR 5 SAMPLES YIELD 100 ± 0

METHOD SUMMARIES

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SDG 8669
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract IUB2819

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

- * LAB SAMPLE ID is the lab's primary identification for a sample.
- * DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.
- * CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.
- * QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

- * All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

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Lab id EAS
Protocol TA
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SDG 8669

SDG 8669
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract IUB2819

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

- * The preparation batches are shown in the same order as the Method Summary Reports are printed.
- * Only analyses of planchets relevant to the SDG are included.
- * Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.
- * The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

These qualifiers should be reviewed as follows:

- X Some data has been manually entered or modified. Transcription errors are possible.
- P One or more results are 'preliminary'. The data is not ready for final reporting.
- 2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

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SDG 8669

SDG 8669
Contact N. Joseph Verville

REPORT GUIDE

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Contract IUB2819

WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

- * TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.
- * SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.
- * The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.
- * PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.
- * For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.
- * The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

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Contact N. Joseph Verville

REPORT GUIDE

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DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

- * TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.
- * The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

- * ERRORS can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.
- * A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.
- * When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

- U The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.

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Version Ver 1.0
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Version 3.06
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Contract IUB2819

GUIDE, cont.

DATA SHEET

- J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
- B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.
- L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.
- H Similar to 'L' except the recovery was high.
- P The RESULT is 'preliminary'.
- X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
- 2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

- * An MDA is underlined if it is bigger than its RDL.
- * An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA

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DATA SHEET

may not be a good estimate of the 'real' minimum detectable activity.

- * A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.
- * When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 03/30/11

EBERLINE ANALYTICAL

SDG 8669

SDG 8669
 Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.
 Contract IUB2819

LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.
- * An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- * The first, computed limits for the recovery reflect:
 1. The error of RESULT, including that introduced by rounding the result prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
 2. The error of ADDED.
 3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- * The second limits are protocol defined upper and lower QC limits for the recovery.
- * The recovery is underlined if it is outside either of these ranges.

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DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTS divided by their average expressed as a percent.

If both RESULTS are less than their MDAs, no RPD is computed and a '-' is printed.

For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

- * The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTS prior to printing.

If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not.

This value reported for this limit is at most 999.

- * The second limit for the RPD is the larger of:
 1. A fixed percentage specified in the protocol.

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DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

- * The RPD is underlined if it is greater than either limit.
- * If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

- * The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

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MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

- * The first, computed limits for the recovery reflect:

1. The errors of the two RESULTS, including those introduced by rounding them prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

2. The error of ADDED.

3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

- * The second limits are protocol defined upper and lower QC limits for the recovery.

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MATRIX SPIKE

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

- * The recovery is underlined (out of spec) if it is outside either of these ranges.

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Contract IUB2819

METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

- * Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

- * The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

- * If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

The J and X flags are as on the data sheet.

- * Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.
- * Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data' means no amount ADDED was specified. 'LOW' and 'HIGH'

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METHOD SUMMARY

correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

- * Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.
- * If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

MDAs are underlined if greater than the printed RDL.

- * Aliquots are underlined if less than the nominal value specified for the method.
- * Preparation factors are underlined if greater than the nominal value specified for the method.
- * Dilution factors are underlined if greater than the nominal value specified for the method.
- * Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.
- * Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.
- * Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.
- * Count times are underlined if less than the nominal value

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Client Test America, Inc.
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METHOD SUMMARY

specified for the method.

- * Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.
- * Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.
- * Days Held are underlined if greater than the holding time specified in the protocol.
- * Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1+3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included.

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METHOD SUMMARY

No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

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Lab id EAS
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Subcontract Order - TestAmerica Irvine (IUB2819)

SENDING LABORATORY:

TestAmerica Irvine
 17461 Derian Avenue, Suite 100
 Irvine, CA 92614
 Phone: (949) 261-1022
 Fax: (949) 260-3297
 Project Manager: Debby Wilson

RECEIVING LABORATORY:

Eberline Services - SUB
 2030 Wright Avenue
 Richmond, CA 94804
 Phone : (510) 235-2633
 Fax: (510) 235-0438
 Project Location: California
 Receipt Temperature: _____ °C

8669

Ice: Y N

Standard TAT is requested unless specific due date is requested. => Due Date: _____ Initials: _____

Analysis	Units	Expires	Comments
----------	-------	---------	----------

Sample ID: IUB2819-03 (Outfall 018 (Composite) - Water)

Sampled: 02/27/11 08:38

Gamma Spec-O	mg/kg	02/27/12 08:38	jflags; Cs 137 + K 40; do not filter
Gross Alpha-O	pCi/L	08/26/11 08:38	jflags; do not filter
Gross Beta-O	pCi/L	08/26/11 08:38	jflags; do not filter
Radium, Combined-O	pCi/L	02/27/12 08:38	jflags; do not filter
Strontium 90-O	pCi/L	02/27/12 08:38	jflags; do not filter
Tritium-O	pCi/L	02/27/12 08:38	jflags; do not filter
Uranium, Combined-O	pCi/L	02/27/12 08:38	jflags; do not filter

Containers Supplied:

2.5 gal Poly (S) 500 mL Amber (T)

Sample ID: IUB2819-04 (Trip Blanks - Water)

Sampled: 02/27/11 10:30

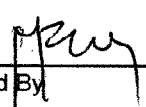
Gamma Spec-O	mg/kg	02/27/12 10:30	jflags; Cs 137 + K 40; do not filter
Gross Alpha-O	pCi/L	08/26/11 10:30	jflags; do not filter
Gross Beta-O	pCi/L	08/26/11 10:30	jflags; do not filter
Radium, Combined-O	pCi/L	02/27/12 10:30	jflags; do not filter
Strontium 90-O	pCi/L	02/27/12 10:30	jflags; do not filter
Uranium, Combined-O	pCi/L	02/27/12 10:30	jflags; do not filter

Containers Supplied:

2.5 gal Poly (A) 500 mL Amber (B)



 Released By Date/Time



 Received By 02/01/11 0940
 Date/Time

 Released By Date/Time

 Received By Date/Time



RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: TEST AMERICA City IRVINE State CA
 Date/Time received 03/01/11 0940 CoC No. 1UR2819
 Container I.D. No. ICE CHEST #3 Requested TAT (Days) STD P.O. Received Yes [] No []

INSPECTION

1. Custody seals on shipping container intact? Yes No [] N/A []
2. Custody seals on shipping container dated & signed? Yes No [] N/A []
3. Custody seals on sample containers intact? Yes [] No [] N/A
4. Custody seals on sample containers dated & signed? Yes [] No [] N/A
5. Packing material is: Wet [] Dry
6. Number of samples in shipping container: 2 Sample Matrix W
7. Number of containers per sample: 2 (Or see CoC _____)
8. Samples are in correct container Yes No []
9. Paperwork agrees with samples? Yes No []
10. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels
11. Samples are: In good condition Leaking [] Broken Container [] Missing []
12. Samples are: Preserved Not preserved pH < 2 / N/A Preservative HNO₃
13. Describe any anomalies:

14. Was P.M. notified of any anomalies? Yes [] No [] Date _____
15. Inspected by [Signature] Date: 03/02/11 Time: 1130

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
<u>See Skuff Log</u>	<u>1600</u>						

Ion Chamber Ser. No. _____ Calibration date _____
 Alpha Meter Ser. No. _____ Calibration date _____
 Beta/Gamma Meter Ser. No. 100482 Calibration date 24 SEP 10

APPENDIX G

Section 53

Outfall 018 – March 20, 2011

MEC^X Data Validation Report



DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: IUC2139

Prepared by

MECX, LP
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title: Boeing SSFL NPDES
 Contract Task Order: 1261.100D.00
 Sample Delivery Group: IUC2139
 Project Manager: B. Kelly
 Matrix: Water
 QC Level: IV
 No. of Samples: 1
 No. of Reanalyses/Dilutions: 0
 Laboratory: TestAmerica-Irvine

Table 1. Sample Identification

Client ID	Laboratory ID	Sub-Laboratory ID	Matrix	Collected	Method
Outfall 018	IUC2139-	G1C230575-001, S103137	Water	3/20/2011 13:40	200.7, 200.7 (Diss), 245.1, 245.1 (Diss), 1613B, 900.0 MOD, 901.1 MOD, 903.0 MOD, 904 MOD, 905 MOD, 906.0 MOD, ASTM 5174

II. Sample Management

No anomalies were observed regarding sample management. The samples were received above the temperature limit at Eberline; however, due to the nonvolatile nature of the analytes, no qualifications were required. The samples in this SDG were received at the remaining laboratories within the temperature limits of 4°C ±2°C. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. Custody seals were intact upon receipt at Eberline and TestAmerica-West Sacramento. If necessary, the client ID was added to the sample result summary by the reviewer.

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.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
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.	Not applicable.
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.

Qualification Code Reference Table Cont.

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 1613—Dioxin/Furans

Reviewed By: L. Calvin

Date Reviewed: April 10, 2011

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 1613*, and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review (8/02)*.

- 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 1613 QC limits for all standards.
 - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits.
- Blanks: The method blank had a detect between the EDL and the reporting limit for OCDD; however, the method blank concentration was insufficient to qualify the associated sample result for OCDD.

- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613, and RPDs were within the laboratory control limit of ≤50%.
- 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.
- Internal Standards Performance: The labeled standard recoveries in the sample were within the acceptance criteria listed in Table 7 of Method 1613.
- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613.
- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating a representative number of reportable sample results. Individual isomers reported as EMPCs were qualified as estimated nondetects, “UJ,” at the level of the EMPC. Totals including EMPCs were qualified as estimated, “J.” Any detects reported between the estimated detection limit (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.

B. EPA METHODS 200.7 and 245.1—Metals and Mercury

Reviewed By: P. Meeks

Date Reviewed: April 8, 2011

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 Methods 200.7, 245.1*, and the *National Functional Guidelines for Inorganic Data Review (7/02)*.

- Holding Times: Analytical holding times, six months for ICP and ICP-MS metals and 28 days for mercury, were met.
- Tuning: Not applicable to these analyses.
- Calibration: Calibration criteria were met. Mercury initial calibration r^2 values were ≥ 0.995 and all initial and continuing calibration recoveries were within 90-110% for the ICP and

ICP-MS metals and 85-115% for mercury. CRDL/CRI recoveries were within the control limits of 70-130%.

- Blanks: Zinc was detected in the dissolved method blank at 11.1 µg/L; therefore, dissolved zinc detected in the sample was qualified as nondetected, “U,” at the reporting limit. Method blanks and CCBs had no other detects.
- Interference Check Samples: Recoveries were within 80-120%.
- Blank Spikes and Laboratory Control Samples: Recoveries were within method-established control limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG for dissolved mercury. Recoveries and the RPD were within method-established control limits.
- Serial Dilution: No serial dilution analyses were performed.
- Internal Standards Performance: Not applicable to these analyses.
- 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: April 18, 2011

The samples listed in Table 1 for these analyses were validated based on the guidelines outlined in the *EPA Methods 900.0, 901.1, 903.1, 904.0, 905.0, and 906.0*, *ASTM Method D-5174*, and the *National Functional Guidelines for Inorganic Data Review (10/04)*.

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

The gross alpha detector efficiency was less than 20%; therefore, gross alpha detected in the sample was qualified as estimated, "J." The remaining detector efficiencies were $\geq 20\%$.

The tritium aliquot was spiked for efficiency determination; therefore, no calibration was necessary. All chemical yields were at least 40% and were considered acceptable. The gamma spectroscopy analytes were determined at the maximum photopeak energy. The kinetic phosphorescence analyzer (KPA) was calibrated immediately prior to the sample analysis.

- **Blanks:** There were no analytes detected in the method blanks.
- **Blank Spikes and Laboratory Control Samples:** The strontium recovery was nominally above the control limit; however, strontium was not detected in the sample. The remaining recoveries were within laboratory-established control limits.
- **Laboratory Duplicates:** Laboratory duplicate analyses were performed on the sample in this SDG for all analytes. The RPDs were within the laboratory-established control limits.
- **Matrix Spike/Matrix Spike Duplicate:** No MS/MSD analyses were performed for the sample in this SDG. Method accuracy 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 MDAs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Any detects between the MDA 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 MDA. Total uranium, normally reported in aqueous units, was converted to pCi/L using the conversion factor of 0.67 for naturally occurring uranium.

A notation in the preparation log indicated that a portion of the aliquots were filtered and that the filtrate was dissolved and added back to the aliquot.

- 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. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks

Date Reviewed: April 8, 2011

The samples 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 Methods 314.0, SM2510B, and SM2130B*, and the *National Functional Guidelines for Inorganic Data Review (7/02)*.

- Holding Times: Analytical holding times were met.
- Calibration: Calibration criteria were met. Initial calibration r^2 values were ≥ 0.995 and all initial and continuing calibration recoveries were within 90-110%. The perchlorate IPC and reporting limit check standards were recovered within 80-120% and 75-125%, respectively.
- Blanks: Method blanks and CCBs had no detects.
- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratory-established QC limits.
- 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 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. 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 IUC2139

Analysis Method 900

Sample Name Outfall 018 (Composite) **Matrix Type:** WATER **Validation Level:** IV
Lab Sample Name: IUC2139-03 **Sample Date:** 3/20/2011 1:40:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Alpha	12587461	1.08	3	0.364	pCi/L	Jb	J	C, DNQ
Gross Beta	12587472	4.79	4	0.886	pCi/L			

Analysis Method 901.1

Sample Name Outfall 018 (Composite) **Matrix Type:** WATER **Validation Level:** IV
Lab Sample Name: IUC2139-03 **Sample Date:** 3/20/2011 1:40:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cesium-137	10045973	ND	20	1.7	pCi/L	U	U	
Potassium-40	13966002	ND	25	24.7	pCi/L	U	U	

Analysis Method 903.1

Sample Name Outfall 018 (Composite) **Matrix Type:** WATER **Validation Level:** IV
Lab Sample Name: IUC2139-03 **Sample Date:** 3/20/2011 1:40:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	13982633	0.284	1	0.794	pCi/L	U	U	

Analysis Method 904

Sample Name Outfall 018 (Composite) **Matrix Type:** WATER **Validation Level:** IV
Lab Sample Name: IUC2139-03 **Sample Date:** 3/20/2011 1:40:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-228	15262201	0.386	1	0.415	pCi/L	U	U	

Analysis Method 905

Sample Name Outfall 018 (Composite) **Matrix Type:** WATER **Validation Level:** IV
Lab Sample Name: IUC2139-03 **Sample Date:** 3/20/2011 1:40:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	-0.103	2	0.723	pCi/L	U	U	

Analysis Method 906

Sample Name Outfall 018 (Composite) **Matrix Type:** WATER **Validation Level:** IV
Lab Sample Name: IUC2139-03 **Sample Date:** 3/20/2011 1:40:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	-42	500	168	pCi/L	U	U	

Analysis Method ASTM 5174-91

Sample Name Outfall 018 (Composite) **Matrix Type:** WATER **Validation Level:** IV
Lab Sample Name: IUC2139-03 **Sample Date:** 3/20/2011 1:40:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Uranium, Total	NA	0.267	1	0.02	pCi/L	Jb	J	DNQ

Analysis Method EPA 200.7

Sample Name Outfall 018 (Composite) **Matrix Type:** Water **Validation Level:** IV
Lab Sample Name: IUC2139-03 **Sample Date:** 3/20/2011 1:40:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Iron	7439-89-6	1.1	0.040	0.015	mg/l			
Zinc	7440-66-6	15.5	20.0	6.00	ug/l	Ja	J	DNQ

Analysis Method EPA 200.7-Diss

Sample Name Outfall 018 (Composite) **Matrix Type:** Water **Validation Level:** IV
Lab Sample Name: IUC2139-03 **Sample Date:** 3/20/2011 1:40:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Iron	7439-89-6	0.061	0.040	0.015	mg/l			
Zinc	7440-66-6	ND	20.0	6.00	ug/l	B, Ja	U	B

Analysis Method EPA 245.1

Sample Name Outfall 018 (Composite) **Matrix Type:** Water **Validation Level:** IV
Lab Sample Name: IUC2139-03 **Sample Date:** 3/20/2011 1:40:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.20	0.10	ug/l		U	

Analysis Method *EPA 245.1-Diss*

Sample Name Outfall 018 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUC2139-03 **Sample Date:** 3/20/2011 1:40:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.20	0.10	ug/l		U	

Analysis Method *EPA 314.0*

Sample Name Outfall 018 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUC2139-03 **Sample Date:** 3/20/2011 1:40:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797-73-0	ND	4.0	0.90	ug/l		U	

Analysis Method EPA-5 1613B

Sample Name Outfall 018 (Composite) **Matrix Type:** WATER **Validation Level:** IV
Lab Sample Name: IUC2139-03 **Sample Date:** 3/20/2011 1:40:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822-46-9	ND	0.00005	0.0000043	ug/L	J, Q	UJ	*III
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.00005	0.000002	ug/L	J, Q	UJ	*III
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.00005	0.0000031	ug/L		U	
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.00005	0.0000013	ug/L		U	
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.00005	0.0000011	ug/L		U	
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.00005	0.0000017	ug/L	J, Q	UJ	*III
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.00005	0.0000009	ug/L		U	
1,2,3,7,8,9-HxCDD	19408-74-3	2.9e-006	0.00005	0.0000015	ug/L	J	J	DNQ
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.00005	0.0000013	ug/L		U	
1,2,3,7,8-PeCDD	40321-76-4	ND	0.00005	0.0000012	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	ND	0.00005	0.0000013	ug/L		U	
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.00005	0.0000009	ug/L		U	
2,3,4,7,8-PeCDF	57117-31-4	ND	0.00005	0.0000013	ug/L		U	
2,3,7,8-TCDD	1746-01-6	ND	0.00001	0.0000012	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.00001	0.0000014	ug/L		U	
OCDD	3268-87-9	0.0006	0.0001	0.0000082	ug/L	Ba		
OCDF	39001-02-0	ND	0.0001	0.0000041	ug/L	J, Q	UJ	*III
Total HpCDD	37871-00-4	0.00011	0.00005	0.0000043	ug/L	J, Q	J	DNQ, *III
Total HpCDF	38998-75-3	2.9e-005	0.00005	0.0000025	ug/L	J, Q	J	DNQ, *III
Total HxCDD	34465-46-8	1.6e-005	0.00005	0.0000017	ug/L	J, Q	J	DNQ, *III
Total HxCDF	55684-94-1	6.7e-006	0.00005	0.0000011	ug/L	J	J	DNQ
Total PeCDD	36088-22-9	ND	0.00005	0.0000012	ug/L		U	
Total PeCDF	30402-15-4	ND	0.00005	0.0000013	ug/L		U	
Total TCDD	41903-57-5	ND	0.00001	0.0000012	ug/L		U	
Total TCDF	55722-27-5	ND	0.00001	0.0000014	ug/L		U	

Analysis Method SM2130B

Sample Name Outfall 018 (Composite) **Matrix Type:** Water **Validation Level:** IV
Lab Sample Name: IUC2139-03 **Sample Date:** 3/20/2011 1:40:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Turbidity	Turb	30	1.0	0.040	NTU			

Analysis Method *SM2510B*

Sample Name Outfall 018 (Grab) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUC2139-01 **Sample Date:** 3/20/2011 11:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Specific Conductance	NA	280	1.0	1.0	umhos/c			

APPENDIX G

Section 54

Outfall 018 – March 20, 2011

Test America Analytical Laboratory Report

LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project: Routine Outfall 018 2010
Routine Outfall 018

Sampled: 03/20/11
Received: 03/20/11
Issued: 04/15/11 07:01

NELAP #01108CA California ELAP#2706 CSDLAC #10256 AZ #AZ0671 NV #CA01531

*The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain(s) of Custody, 3 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.*

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 4°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the TestAmerica Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Results that fall between the MDL and RL are 'J' flagged.

SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.

ADDITIONAL INFORMATION: WATER, 1613B, Dioxins/Furans with Totals

Some analytes in this sample have an ion abundance ratio that is outside of criteria. The analytes are considered as an "estimated maximum possible concentration" (EMPC) because the quantitation is based on the theoretical ion abundance ratio. Analytical results are reported with a "Q" flag.

LABORATORY ID

IUC2139-01
IUC2139-02
IUC2139-03

CLIENT ID

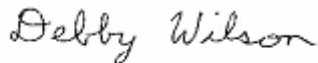
Outfall 018 (Grab)
Trip Blanks
Outfall 018 (Composite)

MATRIX

Water
Water
Water

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.

Reviewed By:



TestAmerica Irvine

Debby Wilson
Project Manager

MWH-Pasadena/Boeing
 618 Michillinda Avenue, Suite 200
 Arcadia, CA 91007
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
 Routine Outfall 018
 Report Number: IUC2139

Sampled: 03/20/11
 Received: 03/20/11

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUC2139-01 (Outfall 018 (Grab) - Water)									
Reporting Units: ug/l									
1,2-Dichloroethane	EPA 624	11C3502	0.28	0.50	ND	1	NA	03/26/11	
1,1-Dichloroethene	EPA 624	11C3502	0.42	2.0	ND	1	NA	03/26/11	
Trichloroethene	EPA 624	11C3502	0.26	2.0	ND	1	NA	03/26/11	
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					90 %				
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					100 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					99 %				
Sample ID: IUC2139-02 (Trip Blanks - Water)									
Reporting Units: ug/l									
1,2-Dichloroethane	EPA 624	11C3502	0.28	0.50	ND	1	NA	03/26/11	
1,1-Dichloroethene	EPA 624	11C3502	0.42	2.0	ND	1	NA	03/26/11	
Trichloroethene	EPA 624	11C3502	0.26	2.0	ND	1	NA	03/26/11	
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					89 %				
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					100 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					99 %				

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Debby Wilson
 Project Manager

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MWH-Pasadena/Boeing
 618 Michillinda Avenue, Suite 200
 Arcadia, CA 91007
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
 Routine Outfall 018
 Report Number: IUC2139

Sampled: 03/20/11
 Received: 03/20/11

ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUC2139-03 (Outfall 018 (Composite) - Water)									
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	11C3070	1.60	4.72	ND	0.943	LB	03/25/11	
2,4-Dinitrotoluene	EPA 625	11C3070	0.189	4.72	ND	0.943	LB	03/25/11	
N-Nitrosodimethylamine	EPA 625	11C3070	0.0943	4.72	ND	0.943	LB	03/25/11	
Pentachlorophenol	EPA 625	11C3070	0.0943	4.72	ND	0.943	LB	03/25/11	
2,4,6-Trichlorophenol	EPA 625	11C3070	0.0943	5.66	ND	0.943	LB	03/25/11	
Surrogate: 2,4,6-Tribromophenol (40-120%)					91 %				
Surrogate: 2-Fluorobiphenyl (50-120%)					83 %				
Surrogate: 2-Fluorophenol (30-120%)					68 %				
Surrogate: Nitrobenzene-d5 (45-120%)					79 %				
Surrogate: Phenol-d6 (35-120%)					75 %				
Surrogate: Terphenyl-d14 (50-125%)					95 %				

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Project ID: Routine Outfall 018 2010
Routine Outfall 018
Report Number: IUC2139

Sampled: 03/20/11
Received: 03/20/11

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUC2139-03 (Outfall 018 (Composite) - Water) - cont.									
Reporting Units: ug/l									
alpha-BHC	EPA 608	11C2988	0.0024	0.0094	ND	0.943	CN	03/24/11	C
Surrogate: Decachlorobiphenyl (45-120%)					89 %				
Surrogate: Tetrachloro-m-xylene (35-115%)					77 %				

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IUC2139 <Page 4 of 50>

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
Routine Outfall 018
Report Number: IUC2139

Sampled: 03/20/11
Received: 03/20/11

HEXANE EXTRACTABLE MATERIAL

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUC2139-01 (Outfall 018 (Grab) - Water)									
Reporting Units: mg/l									
Hexane Extractable Material (Oil & Grease)	EPA 1664A	11C3551	1.3	4.7	ND	1	DA	03/28/11	

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IUC2139 <Page 5 of 50>

MWH-Pasadena/Boeing
 618 Michillinda Avenue, Suite 200
 Arcadia, CA 91007
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
 Routine Outfall 018
 Report Number: IUC2139

Sampled: 03/20/11
 Received: 03/20/11

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUC2139-03 (Outfall 018 (Composite) - Water)									
Reporting Units: mg/l									
Iron	EPA 200.7	11C3037	0.015	0.040	1.1	1	LL	03/23/11	
Sample ID: IUC2139-03 (Outfall 018 (Composite) - Water)									
Reporting Units: ug/l									
Mercury	EPA 245.1	11C2939	0.10	0.20	ND	1	DB	03/23/11	
Cadmium	EPA 200.8	11C2899	0.10	1.0	ND	1	RDC	03/22/11	
Zinc	EPA 200.7	11C3037	6.00	20.0	15.5	1	LL	03/23/11	Ja
Copper	EPA 200.8	11C2899	0.50	2.0	2.7	1	RDC	03/22/11	
Lead	EPA 200.8	11C2899	0.20	1.0	0.72	1	RDC	03/22/11	Ja
Selenium	EPA 200.8	11C2899	0.50	2.0	ND	1	RDC	03/22/11	

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MWH-Pasadena/Boeing
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 Arcadia, CA 91007
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
 Routine Outfall 018
 Report Number: IUC2139

Sampled: 03/20/11
 Received: 03/20/11

DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUC2139-03 (Outfall 018 (Composite) - Water) - cont.									
Reporting Units: mg/l									
Iron	EPA 200.7-Diss	11C3474	0.015	0.040	0.061	1	DP	03/26/11	
Sample ID: IUC2139-03 (Outfall 018 (Composite) - Water)									
Reporting Units: ug/l									
Mercury	EPA 245.1-Diss	11C3083	0.10	0.20	ND	1	DB	03/23/11	
Cadmium	EPA 200.8-Diss	11C3506	0.10	1.0	ND	1	RDC	03/28/11	
Zinc	EPA 200.7-Diss	11C3474	6.00	20.0	9.40	1	DP	03/26/11	B, Ja
Copper	EPA 200.8-Diss	11C3506	0.50	2.0	1.6	1	RDC	03/28/11	Ja
Lead	EPA 200.8-Diss	11C3506	0.20	1.0	ND	1	RDC	03/28/11	
Selenium	EPA 200.8-Diss	11C3506	0.50	2.0	ND	1	RDC	03/28/11	

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MWH-Pasadena/Boeing
 618 Michillinda Avenue, Suite 200
 Arcadia, CA 91007
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
 Routine Outfall 018
 Report Number: IUC2139

Sampled: 03/20/11
 Received: 03/20/11

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUC2139-03 (Outfall 018 (Composite) - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	SM4500NH3-C	11C2967	0.500	0.500	ND	1	TMK	03/22/11	
Biochemical Oxygen Demand	SM5210B	11C2910	0.50	2.0	2.8	1	XL	03/27/11	
Chloride	EPA 300.0	11C2745	0.30	0.50	9.7	1	NN	03/22/11	
Nitrate-N	EPA 300.0	11C2745	0.060	0.11	0.58	1	NN	03/22/11	
Nitrite-N	EPA 300.0	11C2745	0.090	0.15	ND	1	NN	03/22/11	
Nitrate/Nitrite-N	EPA 300.0	11C2745	0.15	0.26	0.58	1	NN	03/22/11	
Sulfate	EPA 300.0	11C2884	3.0	5.0	40	10	NN	03/22/11	
Surfactants (MBAS)	SM5540-C	11C2931	0.050	0.10	ND	1	EL	03/22/11	
Total Dissolved Solids	SM2540C	11C2823	1.0	10	190	1	MC	03/22/11	
Total Suspended Solids	SM 2540D	11C2949	1.0	10	17	1	DK1	03/22/11	

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 Project Manager

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MWH-Pasadena/Boeing
 618 Michillinda Avenue, Suite 200
 Arcadia, CA 91007
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
 Routine Outfall 018
 Report Number: IUC2139

Sampled: 03/20/11
 Received: 03/20/11

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUC2139-01 (Outfall 018 (Grab) - Water)									
Reporting Units: ml/l									
Total Settleable Solids	SM2540F	11C2743	0.10	0.10	ND	1	RRZ	03/21/11	
Sample ID: IUC2139-03 (Outfall 018 (Composite) - Water)									
Reporting Units: NTU									
Turbidity	SM2130B	11C2881	0.040	1.0	30	1	RRZ	03/22/11	
Sample ID: IUC2139-03 (Outfall 018 (Composite) - Water)									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	11C2871	0.90	4.0	ND	1	mn	03/22/11	
Total Cyanide	SM4500CN-E	11C3437	2.2	5.0	ND	1	SLA	03/25/11	
Sample ID: IUC2139-01 (Outfall 018 (Grab) - Water)									
Reporting Units: umhos/cm @ 25C									
Specific Conductance	SM2510B	11C2667	1.0	1.0	280	1	MC	03/21/11	

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Project ID: Routine Outfall 018 2010
Routine Outfall 018
Report Number: IUC2139

Sampled: 03/20/11
Received: 03/20/11

8675

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUC2139-03 (Outfall 018 (Composite) - Water)									
Reporting Units: pCi/L									
Uranium, Total	8675	8675		1	0.267	1	TAC	03/29/11	Jb

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Project ID: Routine Outfall 018 2010
Routine Outfall 018
Report Number: IUC2139

Sampled: 03/20/11
Received: 03/20/11

900

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUC2139-03 (Outfall 018 (Composite) - Water) - cont.									
Reporting Units: pCi/L									
Gross Alpha	900	8675		3	1.08	1	LS	03/31/11	Jb
Gross Beta	900	8675		4	4.79	1	LS	03/31/11	

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Project ID: Routine Outfall 018 2010
Routine Outfall 018
Report Number: IUC2139

Sampled: 03/20/11
Received: 03/20/11

901.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUC2139-03 (Outfall 018 (Composite) - Water) - cont.									
Reporting Units: pCi/L									
Cesium-137	901.1	8675		20	ND	1	LS	03/30/11	U
Potassium-40	901.1	8675		25	ND	1	LS	03/30/11	U

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Routine Outfall 018
Report Number: IUC2139

Sampled: 03/20/11
Received: 03/20/11

903.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUC2139-03 (Outfall 018 (Composite) - Water) - cont.									
Reporting Units: pCi/L									
Radium-226	903.1	8675		1	0.284	1	TM	04/05/11	U

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Routine Outfall 018
Report Number: IUC2139

Sampled: 03/20/11
Received: 03/20/11

904

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUC2139-03 (Outfall 018 (Composite) - Water) - cont.									
Reporting Units: pCi/L									
Radium-228	904	8675		1	0.386	1	LD	04/07/11	U

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Routine Outfall 018
Report Number: IUC2139

Sampled: 03/20/11
Received: 03/20/11

905

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUC2139-03 (Outfall 018 (Composite) - Water) - cont.									
Reporting Units: pCi/L									
Strontium-90	905	8675		2	-0.103	1	EMB	04/01/11	U

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Project ID: Routine Outfall 018 2010
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Report Number: IUC2139

Sampled: 03/20/11
Received: 03/20/11

906

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUC2139-03 (Outfall 018 (Composite) - Water) - cont.									
Reporting Units: pCi/L									
Tritium	906	8675		500	-42	1	WL	03/30/11	U

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Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
Routine Outfall 018
Report Number: IUC2139

Sampled: 03/20/11
Received: 03/20/11

EPA-5 1613Bx

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUC2139-03 (Outfall 018 (Composite) - Water) - cont.									
Reporting Units: ug/L									
1,2,3,4,6,7,8-HpCDD	EPA-5 1613B	1083190	0.0000043	0.00005	4.4e-005	0.97	MO	03/25/11	J, Q
1,2,3,4,6,7,8-HpCDF	EPA-5 1613B	1083190	0.000002	0.00005	1.1e-005	0.97	MO	03/25/11	J, Q
1,2,3,4,7,8,9-HpCDF	EPA-5 1613B	1083190	0.0000031	0.00005	ND	0.97	MO	03/25/11	
1,2,3,4,7,8-HxCDD	EPA-5 1613B	1083190	0.0000013	0.00005	ND	0.97	MO	03/25/11	
1,2,3,4,7,8-HxCDF	EPA-5 1613B	1083190	0.0000011	0.00005	ND	0.97	MO	03/25/11	
1,2,3,6,7,8-HxCDD	EPA-5 1613B	1083190	0.0000017	0.00005	2e-006	0.97	MO	03/25/11	J, Q
1,2,3,6,7,8-HxCDF	EPA-5 1613B	1083190	0.00000097	0.00005	ND	0.97	MO	03/25/11	
1,2,3,7,8,9-HxCDD	EPA-5 1613B	1083190	0.0000015	0.00005	2.9e-006	0.97	MO	03/25/11	J
1,2,3,7,8,9-HxCDF	EPA-5 1613B	1083190	0.0000013	0.00005	ND	0.97	MO	03/25/11	
1,2,3,7,8-PeCDD	EPA-5 1613B	1083190	0.0000012	0.00005	ND	0.97	MO	03/25/11	
1,2,3,7,8-PeCDF	EPA-5 1613B	1083190	0.0000013	0.00005	ND	0.97	MO	03/25/11	
2,3,4,6,7,8-HxCDF	EPA-5 1613B	1083190	0.00000095	0.00005	ND	0.97	MO	03/25/11	
2,3,4,7,8-PeCDF	EPA-5 1613B	1083190	0.0000013	0.00005	ND	0.97	MO	03/25/11	
2,3,7,8-TCDD	EPA-5 1613B	1083190	0.0000012	0.00001	ND	0.97	MO	03/25/11	
2,3,7,8-TCDF	EPA-5 1613B	1083190	0.0000014	0.00001	ND	0.97	MO	03/25/11	
OCDD	EPA-5 1613B	1083190	0.0000082	0.0001	0.0006	0.97	MO	03/25/11	Ba
OCDF	EPA-5 1613B	1083190	0.0000041	0.0001	1.7e-005	0.97	MO	03/25/11	J, Q
Total HpCDD	EPA-5 1613B	1083190	0.0000043	0.00005	0.00011	0.97	MO	03/25/11	J, Q
Total HpCDF	EPA-5 1613B	1083190	0.0000025	0.00005	2.9e-005	0.97	MO	03/25/11	J, Q
Total HxCDD	EPA-5 1613B	1083190	0.0000017	0.00005	1.6e-005	0.97	MO	03/25/11	J, Q
Total HxCDF	EPA-5 1613B	1083190	0.0000011	0.00005	6.7e-006	0.97	MO	03/25/11	J
Total PeCDD	EPA-5 1613B	1083190	0.0000012	0.00005	ND	0.97	MO	03/25/11	
Total PeCDF	EPA-5 1613B	1083190	0.0000013	0.00005	ND	0.97	MO	03/25/11	
Total TCDD	EPA-5 1613B	1083190	0.0000012	0.00001	ND	0.97	MO	03/25/11	
Total TCDF	EPA-5 1613B	1083190	0.0000014	0.00001	ND	0.97	MO	03/25/11	

Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (23-140%)	35 %
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (28-143%)	35 %
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF (26-138%)	31 %
Surrogate: 13C-1,2,3,4,7,8-HxCDD (32-141%)	36 %
Surrogate: 13C-1,2,3,4,7,8-HxCDF (26-152%)	35 %
Surrogate: 13C-1,2,3,6,7,8-HxCDD (28-130%)	39 %
Surrogate: 13C-1,2,3,6,7,8-HxCDF (26-123%)	42 %
Surrogate: 13C-1,2,3,7,8,9-HxCDF (29-147%)	37 %
Surrogate: 13C-1,2,3,7,8-PeCDD (25-181%)	39 %
Surrogate: 13C-1,2,3,7,8-PeCDF (24-185%)	34 %
Surrogate: 13C-2,3,4,6,7,8-HxCDF (28-136%)	40 %
Surrogate: 13C-2,3,4,7,8-PeCDF (21-178%)	35 %
Surrogate: 13C-2,3,7,8-TCDD (25-164%)	37 %
Surrogate: 13C-2,3,7,8-TCDF (24-169%)	39 %
Surrogate: 13C-OCDD (17-157%)	34 %
Surrogate: 37Cl4-2,3,7,8-TCDD (35-197%)	86 %

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Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
Routine Outfall 018
Report Number: IUC2139

Sampled: 03/20/11
Received: 03/20/11

SHORT HOLD TIME DETAIL REPORT

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: Outfall 018 (Grab) (IUC2139-01) - Water					
SM2540F	2	03/20/2011 11:00	03/20/2011 16:40	03/21/2011 08:05	03/21/2011 08:05
Sample ID: Outfall 018 (Composite) (IUC2139-03) - Water					
EPA 300.0	2	03/20/2011 13:40	03/20/2011 16:40	03/21/2011 23:15	03/22/2011 01:35
Filtration	1	03/20/2011 13:40	03/20/2011 16:40	03/21/2011 23:30	03/21/2011 23:30
SM2130B	2	03/20/2011 13:40	03/20/2011 16:40	03/22/2011 11:00	03/22/2011 11:00
SM5210B	2	03/20/2011 13:40	03/20/2011 16:40	03/22/2011 11:00	03/27/2011 12:30
SM5540-C	2	03/20/2011 13:40	03/20/2011 16:40	03/22/2011 11:50	03/22/2011 12:59

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Project ID: Routine Outfall 018 2010
Routine Outfall 018
Report Number: IUC2139

Sampled: 03/20/11
Received: 03/20/11

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11C3502 Extracted: 03/26/11											
Blank Analyzed: 03/26/2011 (11C3502-BLK1)											
1,2-Dichloroethane	ND	0.50	0.28	ug/l							
1,1-Dichloroethene	ND	2.0	0.42	ug/l							
Trichloroethene	ND	2.0	0.26	ug/l							
Surrogate: 4-Bromofluorobenzene	22.4			ug/l	25.0		90	80-120			
Surrogate: Dibromofluoromethane	23.1			ug/l	25.0		92	80-120			
Surrogate: Toluene-d8	24.5			ug/l	25.0		98	80-120			
LCS Analyzed: 03/26/2011 (11C3502-BS1)											
1,2-Dichloroethane	23.2	0.50	0.28	ug/l	25.0		93	60-140			
1,1-Dichloroethene	23.7	2.0	0.42	ug/l	25.0		95	70-125			
Trichloroethene	24.7	2.0	0.26	ug/l	25.0		99	70-125			
Surrogate: 4-Bromofluorobenzene	23.7			ug/l	25.0		95	80-120			
Surrogate: Dibromofluoromethane	23.7			ug/l	25.0		95	80-120			
Surrogate: Toluene-d8	24.7			ug/l	25.0		99	80-120			
Matrix Spike Analyzed: 03/26/2011 (11C3502-MS1)						Source: IUC2031-01					
1,2-Dichloroethane	25.3	0.50	0.28	ug/l	25.0	ND	101	60-140			
1,1-Dichloroethene	22.4	2.0	0.42	ug/l	25.0	ND	90	60-130			
Trichloroethene	24.1	2.0	0.26	ug/l	25.0	ND	97	65-125			
Surrogate: 4-Bromofluorobenzene	23.8			ug/l	25.0		95	80-120			
Surrogate: Dibromofluoromethane	25.1			ug/l	25.0		100	80-120			
Surrogate: Toluene-d8	24.6			ug/l	25.0		99	80-120			
Matrix Spike Dup Analyzed: 03/26/2011 (11C3502-MSD1)						Source: IUC2031-01					
1,2-Dichloroethane	24.7	0.50	0.28	ug/l	25.0	ND	99	60-140	2	20	
1,1-Dichloroethene	22.5	2.0	0.42	ug/l	25.0	ND	90	60-130	0.5	20	
Trichloroethene	24.2	2.0	0.26	ug/l	25.0	ND	97	65-125	0.3	20	
Surrogate: 4-Bromofluorobenzene	23.9			ug/l	25.0		96	80-120			
Surrogate: Dibromofluoromethane	25.2			ug/l	25.0		101	80-120			
Surrogate: Toluene-d8	24.4			ug/l	25.0		98	80-120			

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Project ID: Routine Outfall 018 2010
Routine Outfall 018
Report Number: IUC2139

Sampled: 03/20/11
Received: 03/20/11

METHOD BLANK/QC DATA

ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11C3070 Extracted: 03/23/11											
Blank Analyzed: 03/25/2011 (11C3070-BLK1)											
Bis(2-ethylhexyl)phthalate	ND	5.00	1.70	ug/l							
2,4-Dinitrotoluene	ND	5.00	0.200	ug/l							
N-Nitrosodimethylamine	ND	5.00	0.100	ug/l							
Pentachlorophenol	ND	5.00	0.100	ug/l							
2,4,6-Trichlorophenol	ND	6.00	0.100	ug/l							
Surrogate: 2,4,6-Tribromophenol	15.1			ug/l	20.0		75	40-120			
Surrogate: 2-Fluorobiphenyl	7.92			ug/l	10.0		79	50-120			
Surrogate: 2-Fluorophenol	15.1			ug/l	20.0		76	30-120			
Surrogate: Nitrobenzene-d5	8.22			ug/l	10.0		82	45-120			
Surrogate: Phenol-d6	16.3			ug/l	20.0		81	35-120			
Surrogate: Terphenyl-d14	9.64			ug/l	10.0		96	50-125			
LCS Analyzed: 03/25/2011 (11C3070-BS1)											
Bis(2-ethylhexyl)phthalate	8.60	5.00	1.70	ug/l	10.0		86	65-130			
2,4-Dinitrotoluene	8.64	5.00	0.200	ug/l	10.0		86	65-120			
N-Nitrosodimethylamine	7.72	5.00	0.100	ug/l	10.0		77	45-120			
Pentachlorophenol	6.24	5.00	0.100	ug/l	10.0		62	24-121			
2,4,6-Trichlorophenol	8.04	6.00	0.100	ug/l	10.0		80	55-120			
Surrogate: 2,4,6-Tribromophenol	16.7			ug/l	20.0		84	40-120			
Surrogate: 2-Fluorobiphenyl	7.78			ug/l	10.0		78	50-120			
Surrogate: 2-Fluorophenol	13.0			ug/l	20.0		65	30-120			
Surrogate: Nitrobenzene-d5	7.26			ug/l	10.0		73	45-120			
Surrogate: Phenol-d6	14.5			ug/l	20.0		73	35-120			
Surrogate: Terphenyl-d14	8.72			ug/l	10.0		87	50-125			
LCS Dup Analyzed: 03/25/2011 (11C3070-BSD1)											
Bis(2-ethylhexyl)phthalate	8.74	5.00	1.70	ug/l	10.0		87	65-130	2	20	
2,4-Dinitrotoluene	9.02	5.00	0.200	ug/l	10.0		90	65-120	4	20	
N-Nitrosodimethylamine	7.70	5.00	0.100	ug/l	10.0		77	45-120	0.3	20	
Pentachlorophenol	6.20	5.00	0.100	ug/l	10.0		62	24-121	0.6	25	
2,4,6-Trichlorophenol	8.02	6.00	0.100	ug/l	10.0		80	55-120	0.2	30	
Surrogate: 2,4,6-Tribromophenol	16.9			ug/l	20.0		84	40-120			
Surrogate: 2-Fluorobiphenyl	7.90			ug/l	10.0		79	50-120			
Surrogate: 2-Fluorophenol	13.1			ug/l	20.0		66	30-120			
Surrogate: Nitrobenzene-d5	7.72			ug/l	10.0		77	45-120			
Surrogate: Phenol-d6	15.4			ug/l	20.0		77	35-120			

MNR1

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Project ID: Routine Outfall 018 2010
Routine Outfall 018
Report Number: IUC2139

Sampled: 03/20/11
Received: 03/20/11

METHOD BLANK/QC DATA

ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11C3070 Extracted: 03/23/11											
LCS Dup Analyzed: 03/25/2011 (11C3070-BSD1)											
Surrogate: Terphenyl-d14	8.78			ug/l	10.0		88	50-125			

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Project ID: Routine Outfall 018 2010
 Routine Outfall 018
 Report Number: IUC2139

Sampled: 03/20/11
 Received: 03/20/11

METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11C2988 Extracted: 03/23/11											
Blank Analyzed: 03/23/2011 (11C2988-BLK1)											
alpha-BHC	ND	0.010	0.0025	ug/l							
Surrogate: Decachlorobiphenyl	0.433			ug/l	0.500		87	45-120			
Surrogate: Tetrachloro-m-xylene	0.371			ug/l	0.500		74	35-115			
LCS Analyzed: 03/23/2011 (11C2988-BS1)											
alpha-BHC	0.398	0.010	0.0025	ug/l	0.500		80	45-115			MNR1
Surrogate: Decachlorobiphenyl	0.446			ug/l	0.500		89	45-120			
Surrogate: Tetrachloro-m-xylene	0.383			ug/l	0.500		77	35-115			
LCS Dup Analyzed: 03/23/2011 (11C2988-BSD1)											
alpha-BHC	0.398	0.010	0.0025	ug/l	0.500		80	45-115	0.1	30	
Surrogate: Decachlorobiphenyl	0.441			ug/l	0.500		88	45-120			
Surrogate: Tetrachloro-m-xylene	0.384			ug/l	0.500		77	35-115			

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METHOD BLANK/QC DATA

HEXANE EXTRACTABLE MATERIAL

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11C3551 Extracted: 03/28/11											
Blank Analyzed: 03/28/2011 (11C3551-BLK1)											
Hexane Extractable Material (Oil & Grease)	ND	5.0	1.4	mg/l							
LCS Analyzed: 03/28/2011 (11C3551-BS1)											
Hexane Extractable Material (Oil & Grease)	18.7	5.0	1.4	mg/l	20.0		94	78-114			MNR1
LCS Dup Analyzed: 03/28/2011 (11C3551-BSD1)											
Hexane Extractable Material (Oil & Grease)	19.1	5.0	1.4	mg/l	20.0		96	78-114	2	11	

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11C2899 Extracted: 03/22/11											
Blank Analyzed: 03/22/2011 (11C2899-BLK1)											
Cadmium	ND	1.0	0.10	ug/l							
Copper	ND	2.0	0.50	ug/l							
Lead	ND	1.0	0.20	ug/l							
Selenium	ND	2.0	0.50	ug/l							
LCS Analyzed: 03/22/2011 (11C2899-BS1)											
Cadmium	85.3	1.0	0.10	ug/l	80.0		107	85-115			
Copper	82.8	2.0	0.50	ug/l	80.0		104	85-115			
Lead	79.6	1.0	0.20	ug/l	80.0		100	85-115			
Selenium	82.8	2.0	0.50	ug/l	80.0		104	85-115			
Matrix Spike Analyzed: 03/22/2011 (11C2899-MS1) Source: IUC2134-02											
Cadmium	77.7	1.0	0.10	ug/l	80.0	ND	97	70-130			
Copper	85.0	2.0	0.50	ug/l	80.0	4.75	100	70-130			
Lead	73.0	1.0	0.20	ug/l	80.0	1.35	90	70-130			
Selenium	75.4	2.0	0.50	ug/l	80.0	ND	94	70-130			
Matrix Spike Analyzed: 03/22/2011 (11C2899-MS2) Source: IUC1965-02											
Cadmium	77.9	1.0	0.10	ug/l	80.0	ND	97	70-130			
Copper	84.2	2.0	0.50	ug/l	80.0	6.68	97	70-130			
Lead	70.4	1.0	0.20	ug/l	80.0	0.795	87	70-130			
Selenium	80.3	2.0	0.50	ug/l	80.0	2.49	97	70-130			
Matrix Spike Dup Analyzed: 03/22/2011 (11C2899-MSD1) Source: IUC2134-02											
Cadmium	78.2	1.0	0.10	ug/l	80.0	ND	98	70-130	0.6	20	
Copper	86.2	2.0	0.50	ug/l	80.0	4.75	102	70-130	1	20	
Lead	72.3	1.0	0.20	ug/l	80.0	1.35	89	70-130	0.9	20	
Selenium	76.2	2.0	0.50	ug/l	80.0	ND	95	70-130	1	20	

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METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11C2939 Extracted: 03/22/11											
Blank Analyzed: 03/23/2011 (11C2939-BLK1)											
Mercury	ND	0.20	0.10	ug/l							
LCS Analyzed: 03/23/2011 (11C2939-BS1)											
Mercury	7.89	0.20	0.10	ug/l	8.00		99	85-115			
Matrix Spike Analyzed: 03/23/2011 (11C2939-MS1)											
						Source: IUC2224-01					
Mercury	7.87	0.20	0.10	ug/l	8.00	ND	98	70-130			
Matrix Spike Dup Analyzed: 03/23/2011 (11C2939-MSD1)											
						Source: IUC2224-01					
Mercury	7.86	0.20	0.10	ug/l	8.00	ND	98	70-130	0.2	20	
Batch: 11C3037 Extracted: 03/23/11											
Blank Analyzed: 03/23/2011 (11C3037-BLK1)											
Iron	ND	0.040	0.015	mg/l							
Zinc	ND	20.0	6.00	ug/l							
LCS Analyzed: 03/23/2011 (11C3037-BS1)											
Iron	0.562	0.040	0.015	mg/l	0.500		112	85-115			
Zinc	524	20.0	6.00	ug/l	500		105	85-115			
Matrix Spike Analyzed: 03/23/2011 (11C3037-MS1)											
						Source: IUC2108-02					
Iron	0.559	0.040	0.015	mg/l	0.500	ND	112	70-130			
Zinc	509	20.0	6.00	ug/l	500	ND	102	70-130			
Matrix Spike Analyzed: 03/23/2011 (11C3037-MS2)											
						Source: IUC1923-02					
Iron	0.558	0.040	0.015	mg/l	0.500	ND	112	70-130			
Zinc	515	20.0	6.00	ug/l	500	ND	103	70-130			

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METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11C3037 Extracted: 03/23/11											
Matrix Spike Dup Analyzed: 03/23/2011 (11C3037-MSD1)						Source: IUC2108-02					
Iron	0.567	0.040	0.015	mg/l	0.500	ND	113	70-130	1	20	
Zinc	522	20.0	6.00	ug/l	500	ND	104	70-130	3	20	

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METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11C3083 Extracted: 03/23/11											
Blank Analyzed: 03/23/2011 (11C3083-BLK1)											
Mercury	ND	0.20	0.10	ug/l							
LCS Analyzed: 03/23/2011 (11C3083-BS1)											
Mercury	7.87	0.20	0.10	ug/l	8.00		98	85-115			
Matrix Spike Analyzed: 03/23/2011 (11C3083-MS1)											
						Source: IUC2139-03					
Mercury	7.77	0.20	0.10	ug/l	8.00	ND	97	70-130			
Matrix Spike Dup Analyzed: 03/23/2011 (11C3083-MSD1)											
						Source: IUC2139-03					
Mercury	7.76	0.20	0.10	ug/l	8.00	ND	97	70-130	0.2	20	
Batch: 11C3474 Extracted: 03/25/11											
Blank Analyzed: 03/26/2011 (11C3474-BLK1)											
Iron	ND	0.040	0.015	mg/l							
Zinc	11.1	20.0	6.00	ug/l							Ja
LCS Analyzed: 03/26/2011 (11C3474-BS1)											
Iron	0.530	0.040	0.015	mg/l	0.500		106	85-115			
Zinc	505	20.0	6.00	ug/l	500		101	85-115			
Matrix Spike Analyzed: 03/26/2011 (11C3474-MS1)											
						Source: IUC2140-03					
Iron	0.577	0.040	0.015	mg/l	0.500	0.0583	104	70-130			
Zinc	509	20.0	6.00	ug/l	500	7.18	100	70-130			
Matrix Spike Dup Analyzed: 03/26/2011 (11C3474-MSD1)											
						Source: IUC2140-03					
Iron	0.594	0.040	0.015	mg/l	0.500	0.0583	107	70-130	3	20	
Zinc	531	20.0	6.00	ug/l	500	7.18	105	70-130	4	20	

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METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11C3506 Extracted: 03/26/11											
Blank Analyzed: 03/28/2011 (11C3506-BLK1)											
Cadmium	ND	1.0	0.10	ug/l							
Copper	ND	2.0	0.50	ug/l							
Lead	ND	1.0	0.20	ug/l							
Selenium	ND	2.0	0.50	ug/l							
LCS Analyzed: 03/28/2011 (11C3506-BS1)											
Cadmium	79.3	1.0	0.10	ug/l	80.0		99	85-115			
Copper	84.1	2.0	0.50	ug/l	80.0		105	85-115			
Lead	78.6	1.0	0.20	ug/l	80.0		98	85-115			
Selenium	79.7	2.0	0.50	ug/l	80.0		100	85-115			
Matrix Spike Analyzed: 03/28/2011 (11C3506-MS1) Source: IUC2142-02											
Cadmium	77.2	1.0	0.10	ug/l	80.0	ND	96	70-130			
Copper	83.9	2.0	0.50	ug/l	80.0	1.96	102	70-130			
Lead	76.8	1.0	0.20	ug/l	80.0	0.555	95	70-130			
Selenium	74.2	2.0	0.50	ug/l	80.0	ND	93	70-130			
Matrix Spike Analyzed: 03/28/2011 (11C3506-MS2) Source: IUC2141-02											
Cadmium	77.0	1.0	0.10	ug/l	80.0	ND	96	70-130			
Copper	83.9	2.0	0.50	ug/l	80.0	2.04	102	70-130			
Lead	76.2	1.0	0.20	ug/l	80.0	ND	95	70-130			
Selenium	73.3	2.0	0.50	ug/l	80.0	ND	92	70-130			
Matrix Spike Dup Analyzed: 03/28/2011 (11C3506-MSD1) Source: IUC2142-02											
Cadmium	78.2	1.0	0.10	ug/l	80.0	ND	98	70-130	1	20	
Copper	84.8	2.0	0.50	ug/l	80.0	1.96	104	70-130	1	20	
Lead	76.6	1.0	0.20	ug/l	80.0	0.555	95	70-130	0.3	20	
Selenium	73.5	2.0	0.50	ug/l	80.0	ND	92	70-130	1	20	

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11C2667 Extracted: 03/21/11											
Blank Analyzed: 03/21/2011 (11C2667-BLK1)											
Specific Conductance	ND	1.0	1.0	hos/cm @ 2							
LCS Analyzed: 03/21/2011 (11C2667-BS1)											
Specific Conductance	1410	1.0	1.0	hos/cm @ 2	1410		100	90-110			
Duplicate Analyzed: 03/21/2011 (11C2667-DUP1)											
Specific Conductance	15200	2.0	2.0	hos/cm @ 2		Source: IUC2135-01 15200			0.1	5	
Batch: 11C2745 Extracted: 03/21/11											
Blank Analyzed: 03/21/2011 (11C2745-BLK1)											
Chloride	ND	0.50	0.30	mg/l							
Nitrate-N	ND	0.11	0.060	mg/l							
Nitrite-N	ND	0.15	0.090	mg/l							
Nitrate/Nitrite-N	ND	0.26	0.15	mg/l							
LCS Analyzed: 03/21/2011 (11C2745-BS1)											
Chloride	4.85	0.50	0.30	mg/l	5.00		97	90-110			
Nitrate-N	1.17	0.11	0.060	mg/l	1.13		104	90-110			
Nitrite-N	1.45	0.15	0.090	mg/l	1.52		95	90-110			
Matrix Spike Analyzed: 03/21/2011 (11C2745-MS1)											
Chloride	458	25	15	mg/l	50.0	418	80	80-120			MHA
Nitrate-N	12.6	5.5	3.0	mg/l	11.3	ND	112	80-120			
Nitrite-N	20.0	7.5	4.5	mg/l	15.2	ND	132	80-120			MI
Matrix Spike Analyzed: 03/21/2011 (11C2745-MS2)											
Chloride	153	5.0	3.0	mg/l	50.0	109	88	80-120			
Nitrate-N	31.2	1.1	0.60	mg/l	11.3	20.5	95	80-120			
Nitrite-N	16.0	1.5	0.90	mg/l	15.2	ND	105	80-120			

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
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Batch: 11C2745 Extracted: 03/21/11

Matrix Spike Dup Analyzed: 03/21/2011 (11C2745-MSD1)

Source: IUC2093-01

Chloride	477	25	15	mg/l	50.0	418	119	80-120	4	20	MHA
Nitrate-N	11.2	5.5	3.0	mg/l	11.3	ND	99	80-120	12	20	
Nitrite-N	19.3	7.5	4.5	mg/l	15.2	ND	127	80-120	4	20	MI

Batch: 11C2823 Extracted: 03/22/11

Blank Analyzed: 03/22/2011 (11C2823-BLK1)

Total Dissolved Solids	ND	10	1.0	mg/l							
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LCS Analyzed: 03/22/2011 (11C2823-BS1)

Total Dissolved Solids	998	10	1.0	mg/l	1000		100	90-110			
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Duplicate Analyzed: 03/22/2011 (11C2823-DUP1)

Source: IUC2198-02

Total Dissolved Solids	509	10	1.0	mg/l		513			0.8	10	
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Batch: 11C2871 Extracted: 03/22/11

Blank Analyzed: 03/22/2011 (11C2871-BLK1)

Perchlorate	ND	4.0	0.90	ug/l							
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LCS Analyzed: 03/22/2011 (11C2871-BS1)

Perchlorate	26.0	4.0	0.90	ug/l	25.0		104	85-115			
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Matrix Spike Analyzed: 03/22/2011 (11C2871-MS1)

Source: IUC2009-01

Perchlorate	26.1	4.0	0.90	ug/l	25.0	ND	104	80-120			
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<u>Batch: 11C2871 Extracted: 03/22/11</u>											
Matrix Spike Dup Analyzed: 03/22/2011 (11C2871-MSD1)						Source: IUC2009-01					
Perchlorate	26.3	4.0	0.90	ug/l	25.0	ND	105	80-120	0.6	20	
<u>Batch: 11C2881 Extracted: 03/22/11</u>											
Blank Analyzed: 03/22/2011 (11C2881-BLK1)											
Turbidity	ND	1.0	0.040	NTU							
Duplicate Analyzed: 03/22/2011 (11C2881-DUP1)						Source: IUC2139-03					
Turbidity	29.9	1.0	0.040	NTU		29.9			0	20	
Duplicate Analyzed: 03/22/2011 (11C2881-DUP2)						Source: IUC2220-12					
Turbidity	0.280	1.0	0.040	NTU		0.270			4	20	Ja
<u>Batch: 11C2884 Extracted: 03/22/11</u>											
Blank Analyzed: 03/22/2011 (11C2884-BLK1)											
Sulfate	ND	0.50	0.30	mg/l							
LCS Analyzed: 03/22/2011 (11C2884-BS1)											
Sulfate	9.96	0.50	0.30	mg/l	10.0		100	90-110			
Matrix Spike Analyzed: 03/22/2011 (11C2884-MS1)						Source: IUC2181-03					
Sulfate	13.8	0.50	0.30	mg/l	10.0	4.18	96	80-120			
Matrix Spike Analyzed: 03/22/2011 (11C2884-MS2)						Source: IUC2320-01					
Sulfate	48.2	1.0	0.60	mg/l	10.0	38.8	95	80-120			

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<u>Batch: 11C2884 Extracted: 03/22/11</u>											
Matrix Spike Dup Analyzed: 03/22/2011 (11C2884-MSD1)						Source: IUC2181-03					
Sulfate	14.3	0.50	0.30	mg/l	10.0	4.18	101	80-120	4	20	
<u>Batch: 11C2910 Extracted: 03/22/11</u>											
Blank Analyzed: 03/27/2011 (11C2910-BLK1)											
Biochemical Oxygen Demand	ND	2.0	0.50	mg/l							
LCS Analyzed: 03/27/2011 (11C2910-BS1)											
Biochemical Oxygen Demand	198	100	25	mg/l	198		100	85-115			
LCS Dup Analyzed: 03/27/2011 (11C2910-BSD1)											
Biochemical Oxygen Demand	206	100	25	mg/l	198		104	85-115	3	20	
<u>Batch: 11C2931 Extracted: 03/22/11</u>											
Blank Analyzed: 03/22/2011 (11C2931-BLK1)											
Surfactants (MBAS)	ND	0.10	0.050	mg/l							
LCS Analyzed: 03/22/2011 (11C2931-BS1)											
Surfactants (MBAS)	0.250	0.10	0.050	mg/l	0.250		100	90-110			
Matrix Spike Analyzed: 03/22/2011 (11C2931-MS1)						Source: IUC2139-03					
Surfactants (MBAS)	0.244	0.10	0.050	mg/l	0.250	ND	98	50-125			
Matrix Spike Dup Analyzed: 03/22/2011 (11C2931-MSD1)						Source: IUC2139-03					
Surfactants (MBAS)	0.262	0.10	0.050	mg/l	0.250	ND	105	50-125	7	20	

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<u>Batch: 11C2949 Extracted: 03/22/11</u>											
Blank Analyzed: 03/22/2011 (11C2949-BLK1)											
Total Suspended Solids	ND	10	1.0	mg/l							
LCS Analyzed: 03/22/2011 (11C2949-BS1)											
Total Suspended Solids	1000	10	1.0	mg/l	1000		100	85-115			
Duplicate Analyzed: 03/22/2011 (11C2949-DUP1)											
Total Suspended Solids	36.0	10	1.0	mg/l		Source: IUC2184-03 37.0			3	10	
<u>Batch: 11C2967 Extracted: 03/22/11</u>											
Blank Analyzed: 03/22/2011 (11C2967-BLK1)											
Ammonia-N (Distilled)	ND	0.500	0.500	mg/l							
LCS Analyzed: 03/22/2011 (11C2967-BS1)											
Ammonia-N (Distilled)	9.80	0.500	0.500	mg/l	10.0		98	80-115			
Matrix Spike Analyzed: 03/22/2011 (11C2967-MS1)											
Ammonia-N (Distilled)	9.80	0.500	0.500	mg/l	10.0	ND	98	70-120			
Matrix Spike Dup Analyzed: 03/22/2011 (11C2967-MSD1)											
Ammonia-N (Distilled)	9.80	0.500	0.500	mg/l	10.0	ND	98	70-120	0	15	
<u>Batch: 11C3437 Extracted: 03/25/11</u>											
Blank Analyzed: 03/25/2011 (11C3437-BLK1)											
Total Cyanide	ND	5.0	2.2	ug/l							

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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
 Routine Outfall 018
 Report Number: IUC2139

Sampled: 03/20/11
 Received: 03/20/11

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11C3437 Extracted: 03/25/11											
LCS Analyzed: 03/25/2011 (11C3437-BS1)											
Total Cyanide	194	5.0	2.2	ug/l	196		99	90-110			
Matrix Spike Analyzed: 03/25/2011 (11C3437-MS1)											
						Source: IUC2139-03					
Total Cyanide	199	5.0	2.2	ug/l	196	ND	101	70-115			
Matrix Spike Dup Analyzed: 03/25/2011 (11C3437-MSD1)											
						Source: IUC2139-03					
Total Cyanide	201	5.0	2.2	ug/l	196	ND	102	70-115	0.9	15	

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METHOD BLANK/QC DATA

8675

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8675 Extracted: 03/29/11											
LCS Analyzed: 03/29/2011 (S103143-02)											
Uranium, Total	55.3	1	N/A	pCi/L	56.5		98	80-120			
Blank Analyzed: 03/29/2011 (S103143-03)											
Uranium, Total	ND	1	N/A	pCi/L				-			U
Duplicate Analyzed: 03/29/2011 (S103143-04)											
Uranium, Total	0.292	1	N/A	pCi/L				-	9		Jb

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METHOD BLANK/QC DATA

900

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8675 Extracted: 03/31/11											
LCS Analyzed: 03/31/2011 (S103143-02)											
Gross Alpha	122	3	N/A	pCi/L	101		121	70-130			
Gross Beta	83.8	4	N/A	pCi/L	87.1		96	70-130			
Blank Analyzed: 03/31/2011 (S103143-03)											
Gross Alpha	0.261	3	N/A	pCi/L				-			U
Gross Beta	-0.333	4	N/A	pCi/L				-			U
Duplicate Analyzed: 03/31/2011 (S103143-04)											
Gross Alpha	1.94	3	N/A	pCi/L				-	15		Jb
Gross Beta	6.74	4	N/A	pCi/L				-	8		

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METHOD BLANK/QC DATA

901.1

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8675 Extracted: 03/24/11											
LCS Analyzed: 03/31/2011 (S103143-02)						Source:					
Cobalt-60	123	10	N/A	pCi/L	124		99	80-120			
Cesium-137	118	20	N/A	pCi/L	110		107	80-120			
Blank Analyzed: 03/31/2011 (S103143-03)						Source:					
Cesium-137	ND	20	N/A	pCi/L				-			U
Potassium-40	ND	25	N/A	pCi/L				-			U
Duplicate Analyzed: 03/31/2011 (S103143-04)						Source:					
Cesium-134	ND	20	N/A	pCi/L				-	0		U
Cesium-137	ND	20	N/A	pCi/L				-	0		U
Potassium-40	ND	25	N/A	pCi/L				-	0		U

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METHOD BLANK/QC DATA

903.1

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8675 Extracted: 04/05/11											
LCS Analyzed: 04/05/2011 (S103143-02)											
Radium-226	49	1	N/A	pCi/L	55.7		88	80-120			
Blank Analyzed: 04/05/2011 (S103143-03)											
Radium-226	0.031	1	N/A	pCi/L				-			U
Duplicate Analyzed: 04/05/2011 (S103143-04)											
Radium-226	0.283	1	N/A	pCi/L				-	0		U

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METHOD BLANK/QC DATA

904

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8675 Extracted: 04/07/11											
LCS Analyzed: 04/07/2011 (S103143-02)											
Radium-228	3.92	1	N/A	pCi/L	5.01		78	60-140			
Blank Analyzed: 04/07/2011 (S103143-03)											
Radium-228	-0.153	1	N/A	pCi/L				-			U
Duplicate Analyzed: 04/07/2011 (S103143-04)											
Radium-228	0.235	1	N/A	pCi/L				-	0		U

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METHOD BLANK/QC DATA

905

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8675 Extracted: 04/01/11											
LCS Analyzed: 04/01/2011 (S103143-02)											
Strontium-90	19.7	2	N/A	pCi/L	17.4		113	80-120			
Blank Analyzed: 04/01/2011 (S103143-03)											
Strontium-90	0.045	2	N/A	pCi/L				-			U
Duplicate Analyzed: 04/01/2011 (S103143-04)											
Strontium-90	0.078	2	N/A	pCi/L				-	0		U

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METHOD BLANK/QC DATA

906

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8675 Extracted: 03/30/11											
LCS Analyzed: 03/30/2011 (S103143-02)											
Tritium	2150	500	N/A	pCi/L	2350		91	80-120			
Blank Analyzed: 03/30/2011 (S103143-03)											
Tritium	-30.1	500	N/A	pCi/L							U
Duplicate Analyzed: 03/30/2011 (S103143-04)											
Tritium	-10.9	500	N/A	pCi/L					0		U

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METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1083190 Extracted: 03/24/11											
Blank Analyzed: 03/25/2011 (G1C240000190B)						Source:					
1,2,3,4,6,7,8-HpCDD	ND	0.00005	0.0000013	ug/L				-			
1,2,3,4,6,7,8-HpCDF	ND	0.00005	0.00000066	ug/L				-			
1,2,3,4,7,8,9-HpCDF	ND	0.00005	0.00000096	ug/L				-			
1,2,3,4,7,8-HxCDD	ND	0.00005	0.00000068	ug/L				-			
1,2,3,4,7,8-HxCDF	ND	0.00005	0.00000062	ug/L				-			
1,2,3,6,7,8-HxCDD	ND	0.00005	0.00000065	ug/L				-			
1,2,3,6,7,8-HxCDF	ND	0.00005	0.00000033	ug/L				-			
1,2,3,7,8,9-HxCDD	ND	0.00005	0.00000058	ug/L				-			
1,2,3,7,8,9-HxCDF	ND	0.00005	0.00000043	ug/L				-			
1,2,3,7,8-PeCDD	ND	0.00005	0.00000091	ug/L				-			
1,2,3,7,8-PeCDF	ND	0.00005	0.00000087	ug/L				-			
2,3,4,6,7,8-HxCDF	ND	0.00005	0.00000032	ug/L				-			
2,3,4,7,8-PeCDF	ND	0.00005	0.0000009	ug/L				-			
2,3,7,8-TCDD	ND	0.00001	0.00000052	ug/L				-			
2,3,7,8-TCDF	ND	0.00001	0.00000012	ug/L				-			
OCDD	2.2e-006	0.0001	0.00000019	ug/L				-			J
OCDF	ND	0.0001	0.00000021	ug/L				-			
Total HpCDD	ND	0.00005	0.00000013	ug/L				-			
Total HpCDF	ND	0.00005	0.00000066	ug/L				-			
Total HxCDD	ND	0.00005	0.00000058	ug/L				-			
Total HxCDF	ND	0.00005	0.00000032	ug/L				-			
Total PeCDD	ND	0.00005	0.00000091	ug/L				-			
Total PeCDF	ND	0.00005	0.00000087	ug/L				-			
Total TCDD	ND	0.00001	0.00000052	ug/L				-			
Total TCDF	ND	0.00001	0.00000012	ug/L				-			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.0012			ug/L	0.002		61	23-140			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.0011			ug/L	0.002		57	28-143			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.001			ug/L	0.002		52	26-138			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.0011			ug/L	0.002		55	32-141			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.0011			ug/L	0.002		55	26-152			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.0013			ug/L	0.002		64	28-130			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.0013			ug/L	0.002		65	26-123			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.0012			ug/L	0.002		61	29-147			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.0013			ug/L	0.002		65	25-181			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.0011			ug/L	0.002		53	24-185			

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METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1083190 Extracted: 03/24/11											
Blank Analyzed: 03/25/2011 (G1C240000190B)						Source:					
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.0013			ug/L	0.002		65	28-136			
Surrogate: 13C-2,3,4,7,8-PeCDF	0.0011			ug/L	0.002		56	21-178			
Surrogate: 13C-2,3,7,8-TCDD	0.0011			ug/L	0.002		53	25-164			
Surrogate: 13C-2,3,7,8-TCDF	0.0012			ug/L	0.002		58	24-169			
Surrogate: 13C-OCDD	0.0024			ug/L	0.004		61	17-157			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.00066			ug/L	0.0008		82	35-197			
LCS Analyzed: 03/25/2011 (G1C240000190C)						Source:					
1,2,3,4,6,7,8-HpCDD	0.00107	0.00005	0.0000086	ug/L	0.001		107	70-140			
1,2,3,4,6,7,8-HpCDF	0.00109	0.00005	0.0000018	ug/L	0.001		109	82-122			
1,2,3,4,7,8,9-HpCDF	0.00114	0.00005	0.0000027	ug/L	0.001		114	78-138			
1,2,3,4,7,8-HxCDD	0.00109	0.00005	0.00000078	ug/L	0.001		109	70-164			
1,2,3,4,7,8-HxCDF	0.00107	0.00005	0.0000053	ug/L	0.001		107	72-134			
1,2,3,6,7,8-HxCDD	0.0011	0.00005	0.00000071	ug/L	0.001		110	76-134			
1,2,3,6,7,8-HxCDF	0.0011	0.00005	0.0000048	ug/L	0.001		110	84-130			
1,2,3,7,8,9-HxCDD	0.00121	0.00005	0.00000065	ug/L	0.001		121	64-162			
1,2,3,7,8,9-HxCDF	0.00111	0.00005	0.0000064	ug/L	0.001		111	78-130			
1,2,3,7,8-PeCDD	0.000988	0.00005	0.0000025	ug/L	0.001		99	70-142			
1,2,3,7,8-PeCDF	0.00112	0.00005	0.0000034	ug/L	0.001		112	80-134			
2,3,4,6,7,8-HxCDF	0.0011	0.00005	0.0000047	ug/L	0.001		110	70-156			
2,3,4,7,8-PeCDF	0.00109	0.00005	0.0000036	ug/L	0.001		109	68-160			
2,3,7,8-TCDD	0.000219	0.00001	0.0000014	ug/L	0.0002		110	67-158			
2,3,7,8-TCDF	0.000263	0.00001	0.0000015	ug/L	0.0002		132	75-158			
OCDD	0.00207	0.0001	0.000014	ug/L	0.002		103	78-144			Ba
OCDF	0.00204	0.0001	0.000011	ug/L	0.002		102	63-170			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.000957			ug/L	0.002		48	26-166			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.000967			ug/L	0.002		48	21-158			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.000872			ug/L	0.002		44	20-186			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.000944			ug/L	0.002		47	21-193			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.00102			ug/L	0.002		51	19-202			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.00111			ug/L	0.002		56	25-163			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.00109			ug/L	0.002		55	21-159			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.00104			ug/L	0.002		52	17-205			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.00111			ug/L	0.002		56	21-227			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.00095			ug/L	0.002		48	21-192			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.0011			ug/L	0.002		55	22-176			

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METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1083190 Extracted: 03/24/11											
LCS Analyzed: 03/25/2011 (G1C240000190C)											
Surrogate: 13C-2,3,4,7,8-PeCDF	0.000997			ug/L	0.002		50	13-328			
Surrogate: 13C-2,3,7,8-TCDD	0.000983			ug/L	0.002		49	20-175			
Surrogate: 13C-2,3,7,8-TCDF	0.00103			ug/L	0.002		51	22-152			
Surrogate: 13C-OCDD	0.00197			ug/L	0.004		49	13-199			
Surrogate: 37C14-2,3,7,8-TCDD	0.000667			ug/L	0.0008		83	31-191			

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Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
IUC2139-01	1664-HEM	Hexane Extractable Material (Oil & Greas	mg/l	0.57	4.7	15
IUC2139-01	624-(601list)	1,1-Dichloroethene	ug/l	0	2.0	6
IUC2139-01	624-(601list)	1,2-Dichloroethane	ug/l	0	0.50	0.5
IUC2139-01	624-(601list)	Trichloroethene	ug/l	0	2.0	5
IUC2139-01	Settleable Solids - SM2540F	Total Settleable Solids	ml/l	0	0.10	0.3

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
IUC2139-02	624-(601list)	1,1-Dichloroethene	ug/l	0	2.0	6
IUC2139-02	624-(601list)	1,2-Dichloroethane	ug/l	0	0.50	0.5
IUC2139-02	624-(601list)	Trichloroethene	ug/l	0	2.0	5

Compliance Check

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LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
IUC2139-03	608-Pest Boeing 001/002 Q (LL)	alpha-BHC	ug/l	0.00035	0.0094	0.03
IUC2139-03	625-Boeing 001/002 Q-LL	2,4,6-Trichlorophenol	ug/l	0	5.66	13
IUC2139-03	625-Boeing 001/002 Q-LL	2,4-Dinitrotoluene	ug/l	0	4.72	18
IUC2139-03	625-Boeing 001/002 Q-LL	Bis(2-ethylhexyl)phthalate	ug/l	0.30	4.72	4
IUC2139-03	625-Boeing 001/002 Q-LL	N-Nitrosodimethylamine	ug/l	0	4.72	16
IUC2139-03	625-Boeing 001/002 Q-LL	Pentachlorophenol	ug/l	0	4.72	16.5
IUC2139-03	Ammonia-N, Titr 4500NH3-C (w/di	Ammonia-N (Distilled)	mg/l	0	0.500	10.1
IUC2139-03	BOD - SM5210B	Biochemical Oxygen Demand	mg/l	2.84	2.0	30
IUC2139-03	Cadmium-200.8	Cadmium	ug/l	0.055	1.0	3.1
IUC2139-03	Chloride - 300.0	Chloride	mg/l	9.72	0.50	150
IUC2139-03	Copper-200.8	Copper	ug/l	2.71	2.0	14
IUC2139-03	Cyanide, Total-4500CN-E (5ppb)	Total Cyanide	ug/l	1.81	5.0	8.5
IUC2139-03	Iron-200.7	Iron	mg/l	1.14	0.040	0.3
IUC2139-03	Lead-200.8	Lead	ug/l	0.72	1.0	5.2
IUC2139-03	MBAS - SM5540C	Surfactants (MBAS)	mg/l	0.045	0.10	0.5
IUC2139-03	Mercury - 245.1	Mercury	ug/l	0	0.20	0.1
IUC2139-03	Nitrate-N, 300.0	Nitrate-N	mg/l	0.58	0.11	8

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IUC2139-03	Nitrite-N, 300.0	Nitrite-N	mg/l	0	0.15	1
IUC2139-03	Nitrogen, NO3+NO2 -N EPA 300.0	Nitrate/Nitrite-N	mg/l	0.58	0.26	8
IUC2139-03	Perchlorate 314.0 - Default	Perchlorate	ug/l	0	4.0	6
IUC2139-03	Selenium-200.8	Selenium	ug/l	0.093	2.0	5
IUC2139-03	Sulfate-300.0	Sulfate	mg/l	40	5.0	300
IUC2139-03	TDS - SM2540C	Total Dissolved Solids	mg/l	191	10	950
IUC2139-03	TSS - SM2540D	Total Suspended Solids	mg/l	17	10	45

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618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
Routine Outfall 018
Report Number: IUC2139

Sampled: 03/20/11
Received: 03/20/11

DATA QUALIFIERS AND DEFINITIONS

- B** Analyte was detected in the associated Method Blank.
- Ba** Method blank contamination. The associated method blank contains the target analyte at a reportable level.
- C** Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not impacted.
- J** Estimated result. Result is less than the reporting limit.
- Ja** Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
- Jb** The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
- M1** The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
- MHA** Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
- MNR1** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- Q** Estimated maximum possible concentration (EMPC).
- U** The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

TestAmerica Irvine

Debby Wilson
Project Manager

MWH-Pasadena/Boeing
 618 Michillinda Avenue, Suite 200
 Arcadia, CA 91007
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
 Routine Outfall 018
 Report Number: IUC2139

Sampled: 03/20/11
 Received: 03/20/11

Certification Summary

TestAmerica Irvine

Method	Matrix	Nelac	California
EDD + Level 4	Water	N/A	N/A
EPA 1664A	Water	X	X
EPA 200.7-Diss	Water	X	N/A
EPA 200.7	Water	X	N/A
EPA 200.8-Diss	Water	X	N/A
EPA 200.8	Water	X	N/A
EPA 245.1-Diss	Water	X	N/A
EPA 245.1	Water	X	N/A
EPA 300.0	Water	X	N/A
EPA 314.0	Water	X	N/A
EPA 608	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X
Filtration	Water	N/A	N/A
SM 2540D	Water	X	X
SM2130B	Water	X	X
SM2510B	Water	X	N/A
SM2540C	Water	X	N/A
SM2540F	Water	X	X
SM4500CN-E	Water	X	N/A
SM4500NH3-C	Water	X	X
SM5210B	Water	X	X
SM5540-C	Water	X	N/A

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for TestAmerica may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Subcontracted Laboratories

TestAmerica Irvine

Debby Wilson
 Project Manager

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
Routine Outfall 018
Report Number: IUC2139

Sampled: 03/20/11
Received: 03/20/11

Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: Gamma Spec
Samples: IUC2139-03

Analysis Performed: Gross Alpha
Samples: IUC2139-03

Analysis Performed: Gross Beta
Samples: IUC2139-03

Analysis Performed: Level 4 Data Package
Samples: IUC2139-03

Analysis Performed: Radium, Combined
Samples: IUC2139-03

Analysis Performed: Strontium 90
Samples: IUC2139-03

Analysis Performed: Tritium
Samples: IUC2139-03

Analysis Performed: Uranium, Combined
Samples: IUC2139-03

TestAmerica Irvine

Debby Wilson
Project Manager

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 018 2010
Routine Outfall 018
Report Number: IUC2139

Sampled: 03/20/11
Received: 03/20/11

TestAmerica Buffalo

10 Hazelwood Drive, Suite 106 - Amherst, NY 14228

Method Performed: 8675
Samples: IUC2139-03

Method Performed: 900
Samples: IUC2139-03

Method Performed: 901.1
Samples: IUC2139-03

Method Performed: 903.1
Samples: IUC2139-03

Method Performed: 904
Samples: IUC2139-03

Method Performed: 905
Samples: IUC2139-03

Method Performed: 906
Samples: IUC2139-03

TestAmerica West Sacramento *NELAC Cert #1119CA, Nevada Cert #CA44*

880 Riverside Parkway - West Sacramento, CA 95605

Method Performed: EPA-5 1613B
Samples: IUC2139-03

TestAmerica Irvine

Debby Wilson
Project Manager



EBERLINE

SERVICES

EBERLINE ANALYTICAL CORPORATION
2030 Wright Avenue
Richmond, California 94804-3849
Phone (510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

April 12, 2011

Ms. Debby Wilson
Test America Irvine
17461 Derian Ave., Ste. 100
Irvine, CA 92614

**Reference: Test America-Irvine IUC2139
Eberline Analytical Report S103137-8675
Sample Delivery Group 8675**

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for one water sample received under Test America Job No. IUC2139. The sample was received on March 23, 2011.

Please call me, if you have any questions concerning the enclosed report.

Sincerely,

N. Joseph Verville
Client Services Manager

NJV/ljb

Enclosure: Level IV CLP-like Data Package CD

1.0 General Comments

Sample delivery group 8675 consists of the analytical results and supporting documentation for one water sample. Sample ID's and reference dates/times are given in the Sample Summary section of the Summary Data report. The sample was received as stated on the chain-of-custody document. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. No holding times were exceeded.

Tritium and gamma analyses were performed on the sample as received i.e. the sample was not filtered. The analytical volumes for all other analyses were subjected to a full nitric acid/hydrofluoric acid dissolution, and analyses were performed on the dissolution volumes.

2.0 Quality Control

Sample IUC2139-03 was analyzed in a common prep batch with other outfall samples from this project. The QC samples from that common prep batch were assigned to SDG 8681 and are also reported herein. Quality Control Samples consisted of laboratory control samples (LCS), method blanks, duplicate analyses and matrix spike analyses. Included in the data package are copies of the Eberline Analytical radiometrics data sheets. The radiometrics data sheets for the QC LCS and QC blank samples indicate Eberline Analytical's standard QC aliquot of 1.0 sample; results for those QC types are calculated as pCi/sample. The QC LCS and QC blank sample results reported in the Summary Data Section have been divided by the appropriate method specific aliquot (see the Lab Method Summaries for specific aliquots) in order to make the results comparable to the field sample results. All QC sample results were within required control limits.

3.0 Method Errors

The error for each result is an estimate of the significant random uncertainties incurred in the measurement process. These are propagated to each final result. They include the counting (Poisson) uncertainty, as well as those intrinsic errors due to carrier or tracer standardization, aliquoting, counter efficiencies, weights, or volumes. The following method errors were propagated to the count error to calculate the 2σ error (Total):

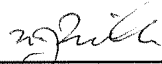
Analysis	Method Error
Gross alpha	20.6%
Gross beta	11.0%
Tritium	10.0%
Sr-90	10.4%
Ra-226	16.4%
Ra-228	10.4%
Uranium, Total	
Gamma Spec.	7.0%

4.0 Analysis Notes

- 4.1 **Gross Alpha/Gross Beta Analysis** – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.2 **Tritium Analysis** – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.3 **Strontium-90 Analysis** – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.4 **Radium-226 Analysis** –No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.5 **Radium-228 Analysis** - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.6 **Total Uranium Analysis** - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.7 **Gamma Spectroscopy** – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

5.0 Case Narrative Certification Statement

“I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.”



N. Joseph Verville
Client Services Manager

4/13/11

Date

EBERLINE ANALYTICAL
SDG 8675

SDG 8675
Contact N. Joseph Verville

Client Test America, Inc.
Contract IUC2139

S U M M A R Y D A T A S E C T I O N

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VB

Prepared by _____

Reviewed by _____

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-TOC
Version 3.06
Report date 04/12/11

EBERLINE ANALYTICAL

SDG 8675

SDG 8675
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract IUC2139

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DUPLICATES

REPORT GUIDES

Page 1

SUMMARY DATA SECTION

Page 1

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/12/11

EBERLINE ANALYTICAL

SDG 8675

SDG 8675
Contact N. Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract IUC2139

ABOUT THE DATA SUMMARY SECTION

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/12/11

EBERLINE ANALYTICAL

SDG 8675

LAB SAMPLE SUMMARY

SDG 8675
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract IUC2139

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF CUSTODY	COLLECTED
S103137-01	IUC2139-03	Boeing - SSFL	WATER			IUC2139	03/20/11 13:40
S103143-02	Lab Control Sample		WATER				
S103143-03	Method Blank		WATER				
S103143-04	Duplicate (S103143-01)	Boeing - SSFL	WATER				03/20/11 21:35

LAB SUMMARY

Page 1

SUMMARY DATA SECTION

Page 3

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LS
 Version 3.06
 Report date 04/12/11

EBERLINE ANALYTICAL

SDG 8675

SDG 8675
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract IUC2139

QC SUMMARY

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% MOIST	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL SAMPLE ID	DEPARTMENT SAMPLE ID
8675	IUC2139	IUC2139-03	WATER		18.0 L		03/23/11 3	S103137-01	8675-001
8681		Method Blank	WATER					S103143-03	8681-003
		Lab Control Sample	WATER					S103143-02	8681-002
		Duplicate (S103143-01)	WATER		10.0 L		03/23/11 3	S103143-04	8681-004

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-QS
 Version 3.06
 Report date 04/12/11

EBERLINE ANALYTICAL

SDG 8675

SDG 8675
Contact N. Joseph Verville

PREP BATCH SUMMARY

Client Test America, Inc.
Contract IUC2139

TEST	MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED				QUALI- FIERS	
			BATCH	2σ %	CLIENT	MORE	RE	BLANK		LCS
Beta Counting										
AC	WATER	Radium-228 in Water	7281-071	10.4	1			1	1	1/0/1
SR	WATER	Strontium-90 in Water	7281-071	10.4	1			1	1	1/0/1
Gas Proportional Counting										
80A	WATER	Gross Alpha in Water	7281-071	20.6	1			1	1	1/0/1
80B	WATER	Gross Beta in Water	7281-071	11.0	1			1	1	1/0/1
Gamma Spectroscopy										
GAM	WATER	Gamma Emitters in Water	7281-071	7.0	1			1	1	1/0/1
Kinetic Phosphorimetry, ug										
U_T	WATER	Uranium, Total	7281-071		1			1	1	1/0/1
Liquid Scintillation Counting										
H	WATER	Tritium in Water	7281-071	10.0	1			1	1	1/0/1
Radon Counting										
RA	WATER	Radium-226 in Water	7281-071	16.4	1			1	1	1/0/1

Blank, LCS, Duplicate and Spike planchets are those in the same preparation batch as some Client sample.
In counts like 'a/b/c', 'a' = QC planchets, 'b' = Originals in this SDG, 'c' = Originals in other SDGs.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 04/12/11

EBERLINE ANALYTICAL

SDG 8675

LAB WORK SUMMARY

SDG 8675
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract IUC2139

LAB SAMPLE	CLIENT SAMPLE ID									
COLLECTED	LOCATION	MATRIX		SUF-						
RECEIVED	CUSTODY	SAS no	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD	
S103137-01	IUC2139-03		8675-001	80A/80		03/31/11	04/01/11	MWT	Gross Alpha in Water	
03/20/11	Boeing - SSFL	WATER	8675-001	80B/80		03/31/11	04/01/11	MWT	Gross Beta in Water	
03/23/11	IUC2139		8675-001	AC		04/07/11	04/11/11	BW	Radium-228 in Water	
			8675-001	GAM		03/30/11	04/04/11	MWT	Gamma Emitters in Water	
			8675-001	H		03/30/11	04/04/11	BW	Tritium in Water	
			8675-001	RA		04/05/11	04/06/11	BW	Radium-226 in Water	
			8675-001	SR		04/01/11	04/08/11	KWP	Strontium-90 in Water	
			8675-001	U_T		03/29/11	03/29/11	BW	Uranium, Total	
S103143-02	Lab Control Sample		8681-002	80A/80		03/31/11	04/01/11	MWT	Gross Alpha in Water	
		WATER	8681-002	80B/80		03/31/11	04/01/11	MWT	Gross Beta in Water	
			8681-002	AC		04/07/11	04/08/11	MWT	Radium-228 in Water	
			8681-002	GAM		03/31/11	04/04/11	MWT	Gamma Emitters in Water	
			8681-002	H		03/30/11	04/04/11	BW	Tritium in Water	
			8681-002	RA		04/05/11	04/06/11	BW	Radium-226 in Water	
			8681-002	SR		04/01/11	04/08/11	MWT	Strontium-90 in Water	
			8681-002	U_T		03/29/11	03/29/11	BW	Uranium, Total	
S103143-03	Method Blank		8681-003	80A/80		03/31/11	04/01/11	MWT	Gross Alpha in Water	
		WATER	8681-003	80B/80		03/31/11	04/01/11	MWT	Gross Beta in Water	
			8681-003	AC		04/07/11	04/08/11	MWT	Radium-228 in Water	
			8681-003	GAM		03/31/11	04/04/11	MWT	Gamma Emitters in Water	
			8681-003	H		03/30/11	04/04/11	BW	Tritium in Water	
			8681-003	RA		04/05/11	04/06/11	BW	Radium-226 in Water	
			8681-003	SR		04/01/11	04/08/11	MWT	Strontium-90 in Water	
			8681-003	U_T		03/29/11	03/29/11	BW	Uranium, Total	
S103143-04	Duplicate (S103143-01)		8681-004	80A/80		03/31/11	04/01/11	MWT	Gross Alpha in Water	
03/20/11	Boeing - SSFL	WATER	8681-004	80B/80		03/31/11	04/01/11	MWT	Gross Beta in Water	
03/23/11			8681-004	AC		04/07/11	04/08/11	MWT	Radium-228 in Water	
			8681-004	GAM		03/31/11	04/04/11	MWT	Gamma Emitters in Water	
			8681-004	H		03/30/11	04/04/11	BW	Tritium in Water	
			8681-004	RA		04/05/11	04/06/11	BW	Radium-226 in Water	
			8681-004	SR		04/01/11	04/08/11	MWT	Strontium-90 in Water	
			8681-004	U_T		03/29/11	03/29/11	BW	Uranium, Total	

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LWS
 Version 3.06
 Report date 04/12/11

EBERLINE ANALYTICAL

SDG 8675

SDG 8675

Contact N. Joseph Verville

Client Test America, Inc.

Contract IUC2139

WORK SUMMARY, cont.

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAS no	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
80A/80		Gross Alpha in Water	900.0	1			1	1	1	4
80B/80		Gross Beta in Water	900.0	1			1	1	1	4
AC		Radium-228 in Water	904.0	1			1	1	1	4
GAM		Gamma Emitters in Water	901.1	1			1	1	1	4
H		Tritium in Water	906.0	1			1	1	1	4
RA		Radium-226 in Water	903.1	1			1	1	1	4
SR		Strontium-90 in Water	905.0	1			1	1	1	4
U_T		Uranium, Total	D5174	1			1	1	1	4
TOTALS				8			8	8	8	32

WORK SUMMARY

Page 2

SUMMARY DATA SECTION

Page 7

Lab id EAS

Protocol TA

Version Ver 1.0

Form DVD-LWS

Version 3.06

Report date 04/12/11

EBERLINE ANALYTICAL

SDG 8675

8681-003

Method Blank

METHOD BLANK

SDG <u>8675</u>	Client <u>Test America, Inc.</u>
Contact <u>N. Joseph Verville</u>	Contract <u>IUC2139</u>
Lab sample id <u>S103143-03</u>	Client sample id <u>Method Blank</u>
Dept sample id <u>8681-003</u>	Material/Matrix <u>WATER</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	0.261	0.90	1.85	3.00	U	80A
Gross Beta	12587472	-0.333	1.4	2.40	4.00	U	80B
Tritium	10028178	-30.1	95	163	500	U	H
Radium-226	13982633	0.031	0.43	0.800	1.00	U	RA
Radium-228	15262201	-0.153	0.16	0.434	1.00	U	AC
Strontium-90	10098972	0.045	0.24	0.468	2.00	U	SR
Uranium, Total		0	0.009	0.020	1.00	U	U_T
Potassium-40	13966002	U		<u>47.4</u>	25.0	U	GAM
Cesium-137	10045973	U		2.34	20.0	U	GAM

QC-BLANK #77925

Lab id <u>EAS</u>
Protocol <u>TA</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/12/11</u>

EBERLINE ANALYTICAL

SDG 8675

8681-002

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>8675</u> Contact <u>N. Joseph Verville</u>	Client <u>Test America, Inc.</u> Contract <u>IUC2139</u>
Lab sample id <u>S103143-02</u> Dept sample id <u>8681-002</u>	Client sample id <u>Lab Control Sample</u> Material/Matrix _____ <u>WATER</u>

ANALYTE	RESULT	2σ ERR	MDA	RDL	QUALI-	ADDED	2σ ERR	REC	2σ LMTS	PROTOCOL
	pCi/L	(COUNT)	pCi/L	pCi/L	FIERS TEST	pCi/L	pCi/L	%	(TOTAL)	LIMITS
Gross Alpha	122	6.6	1.21	3.00	80A	101	4.0	121	74-126	70-130
Gross Beta	83.8	3.7	3.06	4.00	80B	87.1	3.5	96	88-112	70-130
Tritium	2150	150	166	500	H	2350	94	91	88-112	80-120
Radium-226	49.0	2.5	0.859	1.00	RA	55.7	2.2	88	84-116	80-120
Radium-228	3.92	0.34	0.432	1.00	AC	5.01	0.20	78	89-111	60-140
Strontium-90	19.7	1.4	0.576	2.00	SR	17.4	0.70	113	85-115	80-120
Uranium, Total	55.3	6.6	0.205	1.00	U_T	56.5	2.3	98	88-112	80-120
Cobalt-60	123	5.2	2.50	10.0	GAM	124	5.0	99	91-109	80-120
Cesium-137	118	4.8	3.18	20.0	GAM	110	4.4	107	90-110	80-120

QC-LCS #77924

Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-LCS</u> Version <u>3.06</u> Report date <u>04/12/11</u>
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EBERLINE ANALYTICAL

SDG 8675

8681-004

IUC2187-03

DUPLICATE

SDG <u>8675</u>	Client <u>Test America, Inc.</u>	
Contact <u>N. Joseph Verville</u>	Contract <u>IUC2139</u>	
DUPLICATE	ORIGINAL	
Lab sample id <u>S103143-04</u>	Lab sample id <u>S103143-01</u>	Client sample id <u>IUC2187-03</u>
Dept sample id <u>8681-004</u>	Dept sample id <u>8681-001</u>	Location/Matrix <u>Boeing - SSFL</u> <u>WATER</u>
	Received <u>03/23/11</u>	Collected/Volume <u>03/20/11 21:35</u> <u>10.0 L</u>
		Chain of custody id <u>IUC2187</u>

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI- FIERS	RPD %	3σ TOT	DER σ
Gross Alpha	1.94	0.48	0.434	3.00	J	80A	2.26	0.46	0.276	J	15	65	0.7
Gross Beta	6.74	0.70	0.831	4.00		80B	6.22	0.70	0.866		8	33	0.7
Tritium	-10.9	99	168	500	U	H	-77.2	96	167	U	-		1.0
Radium-226	0.283	0.42	0.711	1.00	U	RA	0.350	0.34	0.544	U	-		0.2
Radium-228	0.235	0.38	0.402	1.00	U	AC	0.229	0.32	0.420	U	-		0
Strontium-90	0.078	0.32	0.717	2.00	U	SR	-0.018	0.26	0.625	U	-		0.5
Uranium, Total	0.292	0.034	0.020	1.00	J	U_T	0.321	0.18	0.020	J	9	90	0.3
Potassium-40	U		15.8	25.0	U	GAM	U		<u>58.4</u>	U	-		1.4
Cesium-134	U		3.68	20.0	U	GAM	U			J	0	213	0
Cesium-137	U		1.17	20.0	U	GAM	U		3.25	U	-		1.2

QC-DUP#1 77926

DUPLICATES

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SUMMARY DATA SECTION

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Lab id <u>EAS</u>
Protocol <u>TA</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DUP</u>
Version <u>3.06</u>
Report date <u>04/12/11</u>

EBERLINE ANALYTICAL

SDG 8675

8675-001

IUC2139-03

DATA SHEET

SDG <u>8675</u>	Client <u>Test America, Inc.</u>
Contact <u>N. Joseph Verville</u>	Contract <u>IUC2139</u>
Lab sample id <u>S103137-01</u>	Client sample id <u>IUC2139-03</u>
Dept sample id <u>8675-001</u>	Location/Matrix <u>Boeing - SSFL</u> <u>WATER</u>
Received <u>03/23/11</u>	Collected/Volume <u>03/20/11 13:40</u> <u>18.0 L</u>
	Chain of custody id <u>IUC2139</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	1.08	0.40	0.364	3.00	J	80A
Gross Beta	12587472	4.79	0.68	0.886	4.00		80B
Tritium	10028178	-42.0	98	168	500	U	H
Radium-226	13982633	0.284	0.47	0.794	1.00	U	RA
Radium-228	15262201	0.386	0.42	0.415	1.00	U	AC
Strontium-90	10098972	-0.103	0.28	0.723	2.00	U	SR
Uranium, Total		0.267	0.032	0.020	1.00	J	U_T
Potassium-40	13966002	U		24.7	25.0	U	GAM
Cesium-137	10045973	U		1.70	20.0	U	GAM

Lab id <u>EAS</u>
Protocol <u>TA</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/12/11</u>

EBERLINE ANALYTICAL

SDG 8675

LAB METHOD SUMMARY

RADIUM-228 IN WATER

BETA COUNTING

Test AC Matrix WATER
 SDG 8675
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract IUC2139

RESULTS

LAB RAW SUP-
 SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Radium-228

Preparation batch 7281-071

S103137-01		8675-001	IUC2139-03	U
S103143-02		8681-002	Lab Control Sample	ok
S103143-03		8681-003	Method Blank	U
S103143-04		8681-004	Duplicate (S103143-01)	- U

Nominal values and limits from method RDLs (pCi/L) 1.00

METHOD PERFORMANCE

LAB	RAW	SUP-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-				
SAMPLE ID	TEST	FIX	CLIENT	SAMPLE ID	pCi/L	L	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR

Preparation batch 7281-071 2σ prep error 10.4 % Reference Lab Notebook No. 7281 pg. 71

S103137-01			IUC2139-03		0.415	1.80			76	150		18	04/07/11	04/07	GRB-228
S103143-02			Lab Control Sample		0.432	1.80			80	150			04/07/11	04/07	GRB-230
S103143-03			Method Blank		0.434	1.80			89	150			04/07/11	04/07	GRB-231
S103143-04			Duplicate (S103143-01)		0.402	1.80			88	150		18	04/07/11	04/07	GRB-232

Nominal values and limits from method 1.00 1.80 30-105 50 180

PROCEDURES REFERENCE 904.0
 DWP-894 Sequential Separation of Actinium-228 and Radium-226 in Drinking Water (>1 Liter Aliquot), rev 5

AVERAGES ± 2 SD MDA 0.421 ± 0.030
 FOR 4 SAMPLES YIELD 83 ± 13

METHOD SUMMARIES

Page 1

SUMMARY DATA SECTION

Page 12

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
 Report date 04/12/11

EBERLINE ANALYTICAL

SDG 8675

LAB METHOD SUMMARY

STRONTIUM-90 IN WATER

BETA COUNTING

Test SR Matrix WATER
 SDG 8675
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract IUC2139

RESULTS

LAB **RAW** **SUF-**
SAMPLE ID **TEST FIX** **PLANCHET** **CLIENT SAMPLE ID** **Strontium-90**

Preparation batch 7281-071

S103137-01		8675-001	IUC2139-03	U
S103143-02		8681-002	Lab Control Sample	ok
S103143-03		8681-003	Method Blank	U
S103143-04		8681-004	Duplicate (S103143-01)	- U

Nominal values and limits from method **RDLs (pCi/L)** **2.00**

METHOD PERFORMANCE

LAB **RAW** **SUF-** **MDA** **ALIQ** **PREP** **DILU-** **YIELD** **EFF** **COUNT** **FWHM** **DRIFT** **DAYS** **ANAL-**
SAMPLE ID **TEST FIX** **CLIENT SAMPLE ID** **pCi/L** **L** **FAC** **TION** **%** **%** **min** **keV** **KeV** **HELD** **PREPARED** **YZED** **DETECTOR**

Preparation batch 7281-071 2σ prep error 10.4 % Reference Lab Notebook No. 7281 pg. 71

S103137-01		IUC2139-03	0.723	0.500				76	50		12	04/01/11	04/01	GRB-230
S103143-02		Lab Control Sample	0.576	0.500				94	50			04/01/11	04/01	GRB-232
S103143-03		Method Blank	0.468	0.500				85	100			04/01/11	04/01	GRB-231
S103143-04		Duplicate (S103143-01)	0.717	0.500				83	50		12	04/01/11	04/01	GRB-204

Nominal values and limits from method **2.00** **0.500** **30-105** **50** **180**

PROCEDURES REFERENCE 905.0
 DWP-380 Strontium in Drinking Water, rev 8

AVERAGES ± 2 SD MDA 0.621 ± 0.245
 FOR 4 SAMPLES YIELD 84 ± 15

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
 Report date 04/12/11

EBERLINE ANALYTICAL

SDG 8675

LAB METHOD SUMMARY

GROSS ALPHA IN WATER
GAS PROPORTIONAL COUNTING

Test 80A Matrix WATER
SDG 8675
Contact N. Joseph Verville

Client Test America, Inc.
Contract IUC2139

RESULTS

LAB	RAW	SUF-			
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha	
Preparation batch 7281-071					
S103137-01	80	8675-001	IUC2139-03	1.08	J
S103143-02	80	8681-002	Lab Control Sample	ok	
S103143-03	80	8681-003	Method Blank	U	
S103143-04	80	8681-004	Duplicate (S103143-01)	ok	J
Nominal values and limits from method			RDLs (pCi/L)	3.00	

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	RESID	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	mg	%	min	keV	KeV	HELD PREPARED	YZED DETECTOR
Preparation batch 7281-071 2σ prep error 20.6 % Reference Lab Notebook No. 7281 pg. 71													
S103137-01	80	IUC2139-03	0.364	0.300			56	400				11 03/31/11	03/31 GRB-101
S103143-02	80	Lab Control Sample	1.21	0.100			60	400				03/31/11	03/31 GRB-103
S103143-03	80	Method Blank	1.85	0.100			60	400				03/31/11	03/31 GRB-104
S103143-04	80	Duplicate (S103143-01)	0.434	0.300			26	400				11 03/31/11	03/31 GRB-109
Nominal values and limits from method			3.00	0.100			0-200	100				180	

PROCEDURES REFERENCE 900.0
DWP-121 Gross Alpha and Gross Beta in Drinking Water,
rev 10

AVERAGES ± 2 SD MDA 0.964 ± 1.41
FOR 4 SAMPLES RESIDUE 50 ± 33

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 04/12/11

EBERLINE ANALYTICAL

SDG 8675

LAB METHOD SUMMARY

GROSS BETA IN WATER

GAS PROPORTIONAL COUNTING

Test 80B Matrix WATER
 SDG 8675
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract IUC2139

RESULTS

LAB	RAW	SUF-		
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta

Preparation batch 7281-071

S103137-01	80	8675-001	IUC2139-03	4.79
S103143-02	80	8681-002	Lab Control Sample	ok
S103143-03	80	8681-003	Method Blank	U
S103143-04	80	8681-004	Duplicate (S103143-01)	ok

Nominal values and limits from method RDLs (pCi/L) 4.00

METHOD PERFORMANCE

LAB	RAW	SUF-		MDA	ALIQ	PREP	DILU-	RESID	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID		pCi/L	L	FAC	TION	mg	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR

Preparation batch 7281-071 2σ prep error 11.0 % Reference Lab Notebook No. 7281 pg. 71

S103137-01	80	IUC2139-03	0.886	0.300				56		400			11	03/31/11	03/31	GRB-101
S103143-02	80	Lab Control Sample	3.06	0.100				60		400				03/31/11	03/31	GRB-103
S103143-03	80	Method Blank	2.40	0.100				60		400				03/31/11	03/31	GRB-104
S103143-04	80	Duplicate (S103143-01)	0.831	0.300				26		400			11	03/31/11	03/31	GRB-109

Nominal values and limits from method 4.00 0.100 0-200 100 180

PROCEDURES REFERENCE 900.0
 DWP-121 Gross Alpha and Gross Beta in Drinking Water,
 rev 10

AVERAGES ± 2 SD MDA 1.79 ± 2.23
 FOR 4 SAMPLES RESIDUE 50 ± 33

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
 Report date 04/12/11

EBERLINE ANALYTICAL

SDG 8675

LAB METHOD SUMMARY

GAMMA EMITTERS IN WATER
GAMMA SPECTROSCOPY

Test GAM Matrix WATER
SDG 8675
Contact N. Joseph Verville

Client Test America, Inc.
Contract IUC2139

RESULTS

LAB	RAW	SUF-			
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt-60	Cesium-137

Preparation batch 7281-071

S103137-01	8675-001	IUC2139-03			U
S103143-02	8681-002	Lab Control Sample	ok		ok
S103143-03	8681-003	Method Blank			U
S103143-04	8681-004	Duplicate (S103143-01)			- U

Nominal values and limits from method	RDLs (pCi/L)	10.0	20.0
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METHOD PERFORMANCE

LAB	RAW	SUF-		MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR

Preparation batch 7281-071 2σ prep error 7.0 % Reference Lab Notebook No. 7281 pg. 71

S103137-01	IUC2139-03		2.00							414		10	03/24/11	03/30	01,04,00
S103143-02	Lab Control Sample		2.00							401			03/24/11	03/31	MB,08,00
S103143-03	Method Blank		2.00							621			03/24/11	03/31	MB,05,00
S103143-04	Duplicate (S103143-01)		2.00							596		11	03/24/11	03/31	MB,08,00

Nominal values and limits from method	6.00	2.00			400	180
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PROCEDURES REFERENCE 901.1
DWP-100 Preparation of Drinking Water Samples for Gamma Spectroscopy, rev 5

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 04/12/11

EBERLINE ANALYTICAL

SDG 8675

LAB METHOD SUMMARY

URANIUM, TOTAL

KINETIC PHOSPHORIMETRY, UG

Test U T Matrix WATER

SDG 8675

Contact N. Joseph Verville

Client Test America, Inc.

Contract IUC2139

RESULTS

LAB	RAW	SUF-		Uranium,	
SAMPLE ID	TEST	FIX	PLANCHET	CLIENT SAMPLE ID	Total

Preparation batch 7281-071

S103137-01			8675-001	IUC2139-03	0.267 J
S103143-02			8681-002	Lab Control Sample	ok
S103143-03			8681-003	Method Blank	U
S103143-04			8681-004	Duplicate (S103143-01)	ok J

Nominal values and limits from method RDLs (pCi/L) 1.00

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-			
SAMPLE ID	TEST	FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR

Preparation batch 7281-071 2σ prep error Reference Lab Notebook No. 7281 pg. 71

S103137-01			IUC2139-03	0.020	0.0200								9	03/29/11	03/29	KPA-001
S103143-02			Lab Control Sample	0.205	0.0200									03/29/11	03/29	KPA-001
S103143-03			Method Blank	0.020	0.0200									03/29/11	03/29	KPA-001
S103143-04			Duplicate (S103143-01)	0.020	0.0200								9	03/29/11	03/29	KPA-001

Nominal values and limits from method 1.00 0.0200 180

PROCEDURES REFERENCE D5174

AVERAGES ± 2 SD MDA 0.066 ± 0.185
FOR 4 SAMPLES YIELD _____ ± _____

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EAS

Protocol TA

Version Ver 1.0

Form DVD-LMS

Version 3.06

Report date 04/12/11

EBERLINE ANALYTICAL

SDG 8675

LAB METHOD SUMMARY

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Test H Matrix WATER
 SDG 8675
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract IUC2139

RESULTS

LAB	RAW	SUF-		
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Tritium

Preparation batch 7281-071

S103137-01	8675-001	IUC2139-03	U
S103143-02	8681-002	Lab Control Sample	ok
S103143-03	8681-003	Method Blank	U
S103143-04	8681-004	Duplicate (S103143-01)	- U

Nominal values and limits from method RDLs (pCi/L) 500

METHOD PERFORMANCE

LAB	RAW	SUF-		MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID		pCi/L	L	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR

Preparation batch 7281-071 2σ prep error 10.0 % Reference Lab Notebook No. 7281 pg. 71

S103137-01	IUC2139-03	168	0.0100	100	150	10	03/30/11	03/30	LSC-004
S103143-02	Lab Control Sample	166	0.100	10	150	03/30/11	03/30	LSC-004	
S103143-03	Method Blank	163	0.100	10	150	03/30/11	03/30	LSC-004	
S103143-04	Duplicate (S103143-01)	168	0.0100	100	150	10	03/30/11	03/30	LSC-004

Nominal values and limits from method 500 0.0100 100 180

PROCEDURES REFERENCE 906.0
 DWP-212 Tritium in Drinking Water by Distillation, rev 8

AVERAGES ± 2 SD MDA 166 ± 4.73
 FOR 4 SAMPLES YIELD 55 ± 104

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
 Report date 04/12/11

EBERLINE ANALYTICAL

SDG 8675

LAB METHOD SUMMARY

RADIUM-226 IN WATER
RADON COUNTING

Test RA Matrix WATER
SDG 8675
Contact N. Joseph Verville

Client Test America, Inc.
Contract IUC2139

RESULTS

LAB RAW SUP-
SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Radium-226

Preparation batch 7281-071

S103137-01		8675-001	IUC2139-03	U
S103143-02		8681-002	Lab Control Sample	ok
S103143-03		8681-003	Method Blank	U
S103143-04		8681-004	Duplicate (S103143-01)	- U

Nominal values and limits from method RDLs (pCi/L) 1.00

METHOD PERFORMANCE

LAB	RAW	SUP-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-	
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	%	%	min	keV	KeV	HELD PREPARED	YZED	DETECTOR

Preparation batch 7281-071 2σ prep error 16.4 % Reference Lab Notebook No. 7281 pg. 71

S103137-01		IUC2139-03	0.794	0.100			100		<u>90</u>		16	04/05/11	04/05	RN-011
S103143-02		Lab Control Sample	0.859	0.100			100		<u>90</u>			04/05/11	04/05	RN-009
S103143-03		Method Blank	0.800	0.100			100		<u>90</u>			04/05/11	04/05	RN-010
S103143-04		Duplicate (S103143-01)	0.711	0.100			100		<u>90</u>		16	04/05/11	04/05	RN-015

Nominal values and limits from method 1.00 0.100 100 180

PROCEDURES REFERENCE 903.1
DWP-881A Ra-226 Screening in Drinking Water, rev 6

AVERAGES ± 2 SD MDA 0.791 ± 0.122
FOR 4 SAMPLES YIELD 100 ± 0

METHOD SUMMARIES

Page 8

SUMMARY DATA SECTION

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Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
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EBERLINE ANALYTICAL

SDG 8675

SDG 8675
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract IUC2139

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

- * LAB SAMPLE ID is the lab's primary identification for a sample.
- * DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.
- * CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.
- * QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

- * All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/12/11

EBERLINE ANALYTICAL

SDG 8675

SDG 8675
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract IUC2139

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

- * The preparation batches are shown in the same order as the Method Summary Reports are printed.
- * Only analyses of planchets relevant to the SDG are included.
- * Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.
- * The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

These qualifiers should be reviewed as follows:

- X Some data has been manually entered or modified. Transcription errors are possible.
- P One or more results are 'preliminary'. The data is not ready for final reporting.
- 2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EAS
Protocol TA
Version Ver 1.0
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EBERLINE ANALYTICAL

SDG 8675

SDG 8675
Contact N. Joseph Verville

Client Test America, Inc.
Contract IUC2139

REPORT GUIDE

WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

- * TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.
- * SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.
- * The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.
- * PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.
- * For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.
- * The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/12/11

EBERLINE ANALYTICAL

SDG 8675

SDG 8675
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract IUC2139

DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

- * TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.
- * The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

- * ERRORS can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.
- * A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.
- * When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

- U The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.

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Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/12/11

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J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.

L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.

H Similar to 'L' except the recovery was high.

P The RESULT is 'preliminary'.

X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.

2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

* An MDA is underlined if it is bigger than its RDL.

* An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA

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may not be a good estimate of the 'real' minimum detectable activity.

- * A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.
- * When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

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LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.
- * An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- * The first, computed limits for the recovery reflect:
 1. The error of RESULT, including that introduced by rounding the result prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
 2. The error of ADDED.
 3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- * The second limits are protocol defined upper and lower QC limits for the recovery.
- * The recovery is underlined if it is outside either of these ranges.

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DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTS divided by their average expressed as a percent.

If both RESULTS are less than their MDAs, no RPD is computed and a '-' is printed.

For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

- * The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTS prior to printing.

If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not.

This value reported for this limit is at most 999.

- * The second limit for the RPD is the larger of:
 1. A fixed percentage specified in the protocol.

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2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

- * The RPD is underlined if it is greater than either limit.
- * If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

- * The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

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MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

- * The first, computed limits for the recovery reflect:

1. The errors of the two RESULTS, including those introduced by rounding them prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

2. The error of ADDED.

3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

- * The second limits are protocol defined upper and lower QC limits for the recovery.

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MATRIX SPIKE

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

- * The recovery is underlined (out of spec) if it is outside either of these ranges.

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The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

- * Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

- * The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

- * If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

The J and X flags are as on the data sheet.

- * Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.
- * Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data' means no amount ADDED was specified. 'LOW' and 'HIGH'

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correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

- * Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.
- * If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

MDAs are underlined if greater than the printed RDL.

- * Aliquots are underlined if less than the nominal value specified for the method.
- * Preparation factors are underlined if greater than the nominal value specified for the method.
- * Dilution factors are underlined if greater than the nominal value specified for the method.
- * Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.
- * Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.
- * Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.
- * Count times are underlined if less than the nominal value

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specified for the method.

- * Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.
- * Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.
- * Days Held are underlined if greater than the holding time specified in the protocol.
- * Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1+3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included.

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No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

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Subcontract Order - TestAmerica Irvine (IUC2139)

8675

SENDING LABORATORY:

TestAmerica Irvine
 17461 Derian Avenue, Suite 100
 Irvine, CA 92614
 Phone: (949) 261-1022
 Fax: (949) 260-3297
 Project Manager: Debby Wilson

RECEIVING LABORATORY:

Eberline Services
 2030 Wright Avenue
 Richmond, CA 94804
 Phone: (510) 235-2633
 Fax: (510) 235-0438
 Project Location: California
 Receipt Temperature: _____ °C Ice: Y (N)

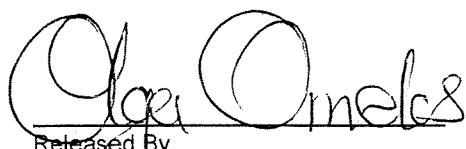
Analysis	Units	Due	Expires	Comments
----------	-------	-----	---------	----------

Sample ID: IUC2139-03 (Outfall 018 (Composite) - Water) Sampled: 03/20/11 13:40

Gamma Spec-O	mg/kg	03/28/11	03/19/12 13:40	jflags; Cs 137 + K 40; do not filter
Gross Alpha-O	pCi/L	03/28/11	09/16/11 13:40	jflags; do not filter
Gross Beta-O	pCi/L	03/28/11	09/16/11 13:40	jflags; do not filter
Level 4 Data Package - Out	N/A	03/28/11	04/17/11 13:40	
Radium, Combined-O	pCi/L	03/28/11	03/19/12 13:40	jflags; do not filter
Strontium 90-O	pCi/L	03/28/11	03/19/12 13:40	jflags; do not filter
Tritium-O	pCi/L	03/28/11	03/19/12 13:40	jflags; do not filter
Uranium, Combined-O	pCi/L	03/28/11	03/19/12 13:40	jflags; do not filter

Containers Supplied:

2.5 gal Poly (T) 500 mL Amber (U)

 Released By	3/22/11 17:00 Date/Time	FedEx Received By	3/22/11 17:00 Date/Time
Released By	Date/Time	Received By	Date/Time



RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: FEST AMERICA City IRVINE State CA
 Date/Time received 03/23/11 09:30 CoC No. 1UC2139
 Container I.D. No. 1 @ CHEST Requested TAT (Days) STD P.O. Received Yes [] No []

INSPECTION

1. Custody seals on shipping container intact? Yes [] No [] N/A []
2. Custody seals on shipping container dated & signed? Yes [] No [] N/A []
3. Custody seals on sample containers intact? Yes [] No [] N/A []
4. Custody seals on sample containers dated & signed? Yes [] No [] N/A []
5. Packing material is: Wet [] Dry []
6. Number of samples in shipping container: 1 Sample Matrix W
7. Number of containers per sample: 7 (Or see CoC _____)
8. Samples are in correct container Yes [] No []
9. Paperwork agrees with samples? Yes [] No []
10. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels []
11. Samples are: In good condition [] Leaking [] Broken Container [] Missing []
12. Samples are: Preserved [] Not preserved [] pH _____ Preservative _____
13. Describe any anomalies:
SAMPLE IN 5.0 GAL CUBITAINER / NOT 2.5 GAL / COC

14. Was P.M. notified of any anomalies? Yes [] No [] Date _____
 15. Inspected by [Signature] Date: 03 Time: _____

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
<u>1UC2139</u>	<u>262</u>						

Ion Chamber Ser. No. _____ Calibration date _____
 Alpha Meter Ser. No. _____ Calibration date _____
 Beta/Gamma Meter Ser. No. 10048 V Calibration date 24 SEP 10

APPENDIX G

Section 55

Outfall 019 – January 6 & 7, 2011

MEC^X Data Validation Report



DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: IUA0604

Prepared by

MEC^x, LP
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title: Boeing SSFL NPDES
 Contract Task Order: 1261.100D.00
 Sample Delivery Group: IUA0604
 Project Manager: B. Kelly
 Matrix: Water
 QC Level: IV
 No. of Samples: 1
 No. of Reanalyses/Dilutions: 0
 Laboratory: TestAmerica-Irvine

Table 1. Sample Identification

Client ID	Laboratory ID	Sub-Laboratory ID	Matrix	Collected	Method
Outfall 019 (composite)	IUA0604-03	G1A110449-001, S101095-01	Water	1/7/2011 8:59:00 AM	180.1, 200.7, 200.7 Diss, 245.1, 245.1-Diss, 314.0, 900, 901.1, 903.1, 904, 905, 906, 1613B, SM2340B, SM2340B Diss, D5471
Outfall 019	IUA0604-01	N/A	Water	1/6/2011 8:35:00 AM	120.1

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at TestAmerica-Irvine, TestAmerica-West Sacramento, and Eberline within the temperature limits of 4°C ±2°C. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. Custody seals were intact upon receipt at Eberline and TestAmerica-West Sacramento. As the samples were delivered to TestAmerica-Irvine by courier, no custody seals were required. If necessary, the client ID was added to the sample result summary by the reviewer.

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.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
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.	Not applicable.
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.

Qualification Code Reference Table Cont.

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 1613—Dioxin/Furans

Reviewed By: L. Calvin

Date Reviewed: February 22, 2011

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 1613*, and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review (8/02)*.

- 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 1613 QC limits for all standards.
 - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits.
- Blanks: The method blank had detects between the EDL and the RL for 1,2,3,4,6,7,8-HpCDD, total HpCDD, OCDD, and OCDF. All but OCDD were reported as EMPCs; however, the reviewer considered it appropriate to use the EMPCs to qualify sample results. All sample results for these compounds were qualified as nondetected, "U," at the

level of contamination, including total HpCDD, as the single peak comprising the total was also present in the method blank.

- Blank Spikes and Laboratory Control Samples: LCS recoveries were within the acceptance criteria listed in Table 6 of Method 1613.
- 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.
- Internal Standards Performance: The labeled standard recoveries in the sample were within the acceptance criteria listed in Table 7 of Method 1613.
- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613.
- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating a representative number of reportable sample results. EMPCs previously qualified as nondetected for method blank contamination were not further qualified as EMPCs. Any detects reported between the estimated detection limit (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.

B. EPA METHODS 200.7 and 245.1—Metals and Mercury

Reviewed By: P. Meeks

Date Reviewed: February 22, 2011

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 245.1*, and the *National Functional Guidelines for Inorganic Data Review (7/02)*.

- Holding Times: The analytical holding times, six months for ICP metals and 28 days for mercury, were met.
- Tuning: Not applicable to these analyses.

- Calibration: Calibration criteria were met. Mercury initial calibration r^2 values were ≥ 0.995 . The initial and continuing calibration recoveries were within 85-115% for mercury and 90-110% for the ICP metals. CRI/CRA 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% and there were no applicable detects above the MDL in the ICSEA.
- Blank Spikes and Laboratory Control Samples: Recoveries were within method-established QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the total fraction of the sample in this SDG for the 200.7 analytes. All recoveries and RPDs were within laboratory-established QC limits.
- Serial Dilution: No serial dilution analyses were performed.
- Internal Standards Performance: Not applicable to this 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.

Both magnesium and zinc were detected at marginally larger concentrations in the dissolved fractions.

- 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. EPA METHOD 314.0—Perchlorate

Reviewed By: P. Meeks

Date Reviewed: February 22, 2011

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for General Minerals (DVP-6, Rev. 0)*, *EPA Method 314.0*, and the *National Functional Guidelines for Inorganic Data Review (7/02)*.

- Holding Times: The analytical holding time, 28 days from collection, was met.
- Calibration: Calibration criteria were met. The initial calibration r^2 value was ≥ 0.995 and the initial and continuing calibration recoveries were within 90-110%. The IPC recovery was within 80-120%.
- Blanks: The method blanks and CCBs had no detects.
- Blank Spikes and Laboratory Control Samples: The recovery was within laboratory-established QC limits.
- Laboratory Duplicates: No laboratory duplicate analysis was performed on the sample in this SDG.
- 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 result.
- 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. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks

Date Reviewed: February 22, 2011

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*, *ASTM Method D-5174*, and the *National Functional Guidelines for Inorganic Data Review (10/04)*.

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

The gross alpha detector efficiency was less than 20%; therefore, nondetected gross alpha in the sample was qualified as estimated, "UJ." The remaining detector efficiencies were greater than 20%.

The tritium aliquot was spiked for efficiency determination; therefore, no calibration was necessary. All chemical yields were at least 40% and were considered acceptable. The gamma spectroscopy analytes were determined at the maximum photopeak energy. The kinetic phosphorescence analyzer (KPA) was calibrated immediately prior to the sample analysis.

- **Blanks:** There were no analytes detected in the method blanks.
- **Blank Spikes and Laboratory Control Samples:** The recoveries were within laboratory-established control limits.
- **Laboratory Duplicates:** Laboratory duplicate analyses were performed on the sample in this SDG for all analytes. The RPDs were within the laboratory-established control limits.
- **Matrix Spike/Matrix Spike Duplicate:** No MS/MSD analyses were performed for the sample in this SDG. Method accuracy 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 MDAs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Any detects between the MDA 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 MDA. Total uranium, normally reported in aqueous units, was converted to pCi/L using the conversion factor of 0.67 for naturally occurring uranium.

- 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. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks

Date Reviewed: February 22, 2011

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for General Minerals (DVP-6, Rev. 0)*, *EPA Methods 120.1 and 180.1*, and the *National Functional Guidelines for Inorganic Data Review (7/02)*.

- Holding Times: The analytical holding times, 48 hours from collection for turbidity and 28 days from collection for conductivity, were met.
- Calibration: Calibration criteria were met. Turbidity initial calibration r^2 values were ≥ 0.995 and all initial and continuing calibration recoveries were within 90-110%.
- Blanks: The method blanks had no detects.
- Blank Spikes and Laboratory Control Samples: The recoveries were within laboratory-established QC limits.
- Laboratory Duplicates: A laboratory duplicate analyses was performed on the sample in this SDG for turbidity. The RPD was within the laboratory-established control limit.
- Matrix Spike/Matrix Spike Duplicate: Not applicable to these analyses.
- 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 IUA0604

Analysis Method 8661

Sample Name Outfall 019 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUA0604-03 **Sample Date:** 1/7/2011 8:59:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Uranium, Total		0.065	1	0.016	pCi/L	Jb	J	DNQ

Analysis Method 900

Sample Name Outfall 019 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUA0604-03 **Sample Date:** 1/7/2011 8:59:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Alpha	12587461	0.496	3	1.13	pCi/L	U	UJ	C
Gross Beta	12587472	0.161	4	1.75	pCi/L	U	U	

Analysis Method 901.1

Sample Name Outfall 019 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUA0604-03 **Sample Date:** 1/7/2011 8:59:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cesium-137	10045973	ND	20	1.1	pCi/L	U	U	
Potassium-40	13966002	ND	25	22.6	pCi/L	U	U	

Analysis Method 903.1

Sample Name Outfall 019 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUA0604-03 **Sample Date:** 1/7/2011 8:59:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	13982633	0.448	1	0.512	pCi/L	U	U	

Analysis Method 904

Sample Name Outfall 019 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUA0604-03 **Sample Date:** 1/7/2011 8:59:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-228	15262201	0.17	1	0.339	pCi/L	U	U	

Analysis Method 905

Sample Name	Outfall 019 (Composite)	Matrix Type:	WATER	Validation Level:	IV			
Lab Sample Name:	IUA0604-03	Sample Date:	1/7/2011 8:59:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	0.051	2	1.79	pCi/L	U	U	

Analysis Method 906

Sample Name	Outfall 019 (Composite)	Matrix Type:	WATER	Validation Level:	IV			
Lab Sample Name:	IUA0604-03	Sample Date:	1/7/2011 8:59:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	-18.9	500	298	pCi/L	U	U	

Analysis Method EPA 120.1

Sample Name	Outfall 019	Matrix Type:	Water	Validation Level:	IV			
Lab Sample Name:	IUA0604-01	Sample Date:	1/6/2011 8:35:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Specific Conductance	NA	760	1.0	1.0	umhos/c			

Analysis Method EPA 180.1

Sample Name	Outfall 019 (Composite)	Matrix Type:	Water	Validation Level:	IV			
Lab Sample Name:	IUA0604-03	Sample Date:	1/7/2011 8:59:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Turbidity	Turb	0.26	1.0	0.040	NTU	Ja	J	DNQ

Analysis Method EPA 200.7

Sample Name	Outfall 019 (Composite)	Matrix Type:	Water	Validation Level:	IV			
Lab Sample Name:	IUA0604-03	Sample Date:	1/7/2011 8:59:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Calcium	7440-70-2	16	0.10	0.050	mg/l	MHA		
Magnesium	7439-95-4	0.056	0.020	0.012	mg/l			
Zinc	7440-66-6	50.2	20.0	6.00	ug/l			

Analysis Method *EPA 200.7-Diss*

Sample Name	Outfall 019 (Composite)	Matrix Type:	Water	Validation Level:	IV			
Lab Sample Name:	IUA0604-03	Sample Date:	1/7/2011 8:59:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Calcium	7440-70-2	15	0.10	0.050	mg/l			
Magnesium	7439-95-4	0.058	0.020	0.012	mg/l			
Zinc	7440-66-6	56.0	20.0	6.00	ug/l			

Analysis Method *EPA 245.1*

Sample Name	Outfall 019 (Composite)	Matrix Type:	Water	Validation Level:	IV			
Lab Sample Name:	IUA0604-03	Sample Date:	1/7/2011 8:59:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.20	0.10	ug/l		U	

Analysis Method *EPA 245.1-Diss*

Sample Name	Outfall 019 (Composite)	Matrix Type:	Water	Validation Level:	IV			
Lab Sample Name:	IUA0604-03	Sample Date:	1/7/2011 8:59:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.20	0.10	ug/l		U	

Analysis Method *EPA 314.0*

Sample Name	Outfall 019 (Composite)	Matrix Type:	Water	Validation Level:	IV			
Lab Sample Name:	IUA0604-03	Sample Date:	1/7/2011 8:59:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797-73-0	ND	4.0	0.90	ug/l		U	

Analysis Method EPA-5 1613B

Sample Name Outfall 019 (Composite) **Matrix Type:** WATER **Validation Level:** IV
Lab Sample Name: IUA0604-03 **Sample Date:** 1/7/2011 8:59:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822-46-9	ND	0.00005	0.0000017	ug/L	J, Q, Ba	U	B
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.00005	0.0000013	ug/L		U	
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.00005	0.0000022	ug/L		U	
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.00005	0.0000014	ug/L		U	
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.00005	0.0000012	ug/L		U	
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.00005	0.0000013	ug/L		U	
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.00005	0.0000011	ug/L		U	
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.00005	0.0000012	ug/L		U	
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.00005	0.0000014	ug/L		U	
1,2,3,7,8-PeCDD	40321-76-4	ND	0.00005	0.0000019	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	ND	0.00005	0.0000019	ug/L		U	
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.00005	0.000001	ug/L		U	
2,3,4,7,8-PeCDF	57117-31-4	ND	0.00005	0.000002	ug/L		U	
2,3,7,8-TCDD	1746-01-6	ND	0.00001	0.000001	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.00001	0.0000024	ug/L		U	
OCDD	3268-87-9	ND	0.0001	0.0000032	ug/L	J, Q, Ba	U	B
OCDF	39001-02-0	ND	0.0001	0.0000015	ug/L	J, Q, Ba	U	B
Total HpCDD	37871-00-4	ND	0.00005	0.0000017	ug/L	J, Q, Ba	U	B
Total HpCDF	38998-75-3	ND	0.00005	0.0000013	ug/L		U	
Total HxCDD	34465-46-8	ND	0.00005	0.0000012	ug/L		U	
Total HxCDF	55684-94-1	ND	0.00005	0.000001	ug/L		U	
Total PeCDD	36088-22-9	ND	0.00005	0.0000019	ug/L		U	
Total PeCDF	30402-15-4	ND	0.00005	0.0000019	ug/L		U	
Total TCDD	41903-57-5	ND	0.00001	0.000001	ug/L		U	
Total TCDF	55722-27-5	ND	0.00001	0.0000024	ug/L		U	

Analysis Method SM2340B

Sample Name Outfall 019 (Composite) **Matrix Type:** Water **Validation Level:** IV
Lab Sample Name: IUA0604-03 **Sample Date:** 1/7/2011 8:59:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Hardness (as CaCO3)	NA	40	0.33	0.17	mg/l			

Analysis Method *SM2340B-Diss*

Sample Name Outfall 019 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUA0604-03 **Sample Date:** 1/7/2011 8:59:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Hardness as CaCO3		38	0.33	0.17	mg/l			

APPENDIX G

Section 56

Outfall 019 – January 6 & 7, 2011

Test America Analytical Laboratory Report

LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project: Routine Outfall 019

Sampled: 01/06/11-01/07/11
Received: 01/06/11
Issued: 02/08/11 08:16

NELAP #01108CA California ELAP#2706 CSDLAC #10256 AZ #AZ0671 NV #CA01531

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain(s) of Custody, 3 pages, are included and are an integral part of this report. This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.

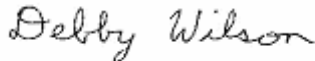
ADDITIONAL INFORMATION: WATER, 1613B, Dioxins/Furans with Totals

Some analytes in this sample and the associated method blank have an ion abundance ratio that is outside of criteria. The analytes are considered as an "estimated maximum possible concentration" (EMPC) because the quantitation is based on the theoretical ion abundance ratio. Analytical results are reported with a "Q" flag.

LABORATORY ID	CLIENT ID	MATRIX
IUA0604-01	Outfall 019	Water
IUA0604-02	Trip Blanks	Water
IUA0604-03	Outfall 019 (Composite)	Water
IUA0604-04	Trip Blank	Water

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.

Reviewed By:



TestAmerica Irvine

Debby Wilson
Project Manager

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 019

Report Number: IUA0604

Sampled: 01/06/11-01/07/11
Received: 01/06/11

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUA0604-01 (Outfall 019 - Water)					Sampled: 01/06/11				
Reporting Units: ug/l									
Benzene	EPA 624	11A1662	0.28	0.50	ND	1	GMK	01/16/11	
Carbon tetrachloride	EPA 624	11A1662	0.28	0.50	ND	1	GMK	01/16/11	
Chloroform	EPA 624	11A1662	0.33	0.50	ND	1	GMK	01/16/11	
1,1-Dichloroethane	EPA 624	11A1662	0.40	0.50	ND	1	GMK	01/16/11	
1,2-Dichloroethane	EPA 624	11A1662	0.28	0.50	ND	1	GMK	01/16/11	
1,1-Dichloroethene	EPA 624	11A1662	0.42	0.50	ND	1	GMK	01/16/11	
Ethylbenzene	EPA 624	11A1662	0.25	0.50	ND	1	GMK	01/16/11	
Tetrachloroethene	EPA 624	11A1662	0.32	0.50	ND	1	GMK	01/16/11	
Toluene	EPA 624	11A1662	0.36	0.50	ND	1	GMK	01/16/11	
1,1,1-Trichloroethane	EPA 624	11A1662	0.30	0.50	ND	1	GMK	01/16/11	
1,1,2-Trichloroethane	EPA 624	11A1662	0.30	0.50	ND	1	GMK	01/16/11	
Trichloroethene	EPA 624	11A1662	0.26	0.50	ND	1	GMK	01/16/11	
Trichlorofluoromethane	EPA 624	11A1662	0.34	0.50	ND	1	GMK	01/16/11	
Trichlorotrifluoroethane (Freon 113)	EPA 624	11A1662	0.50	5.0	ND	1	GMK	01/16/11	
Vinyl chloride	EPA 624	11A1662	0.40	0.50	ND	1	GMK	01/16/11	
Xylenes, Total	EPA 624	11A1662	0.90	1.5	ND	1	GMK	01/16/11	
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					89 %				
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					103 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					97 %				

Sample ID: IUA0604-02 (Trip Blanks - Water)

Sampled: 01/06/11

Reporting Units: ug/l

Benzene	EPA 624	11A1662	0.28	0.50	ND	1	GMK	01/16/11	
Carbon tetrachloride	EPA 624	11A1662	0.28	0.50	ND	1	GMK	01/16/11	
Chloroform	EPA 624	11A1662	0.33	0.50	ND	1	GMK	01/16/11	
1,1-Dichloroethane	EPA 624	11A1662	0.40	0.50	ND	1	GMK	01/16/11	
1,2-Dichloroethane	EPA 624	11A1662	0.28	0.50	ND	1	GMK	01/16/11	
1,1-Dichloroethene	EPA 624	11A1662	0.42	0.50	ND	1	GMK	01/16/11	
Ethylbenzene	EPA 624	11A1662	0.25	0.50	ND	1	GMK	01/16/11	
Tetrachloroethene	EPA 624	11A1662	0.32	0.50	ND	1	GMK	01/16/11	
Toluene	EPA 624	11A1662	0.36	0.50	ND	1	GMK	01/16/11	
1,1,1-Trichloroethane	EPA 624	11A1662	0.30	0.50	ND	1	GMK	01/16/11	
1,1,2-Trichloroethane	EPA 624	11A1662	0.30	0.50	ND	1	GMK	01/16/11	
Trichloroethene	EPA 624	11A1662	0.26	0.50	ND	1	GMK	01/16/11	
Trichlorofluoromethane	EPA 624	11A1662	0.34	0.50	ND	1	GMK	01/16/11	
Trichlorotrifluoroethane (Freon 113)	EPA 624	11A1662	0.50	5.0	ND	1	GMK	01/16/11	
Vinyl chloride	EPA 624	11A1662	0.40	0.50	ND	1	GMK	01/16/11	
Xylenes, Total	EPA 624	11A1662	0.90	1.5	ND	1	GMK	01/16/11	
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					91 %				
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					101 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					100 %				

TestAmerica Irvine

Debby Wilson
Project Manager

MWH-Pasadena/Boeing
 618 Michillinda Avenue, Suite 200
 Arcadia, CA 91007
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 019

Report Number: IUA0604

Sampled: 01/06/11-01/07/11
 Received: 01/06/11

ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUA0604-03 (Outfall 019 (Composite) - Water)					Sampled: 01/07/11				
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	11A1272	1.60	4.72	ND	0.943	LB	01/18/11	
2,4-Dinitrotoluene	EPA 625	11A1272	0.189	4.72	ND	0.943	LB	01/18/11	
N-Nitrosodimethylamine	EPA 625	11A1272	0.0943	4.72	ND	0.943	LB	01/18/11	L
Pentachlorophenol	EPA 625	11A1272	0.0943	4.72	ND	0.943	LB	01/18/11	
2,4,6-Trichlorophenol	EPA 625	11A1272	0.0943	5.66	ND	0.943	LB	01/18/11	
<i>Surrogate: 2,4,6-Tribromophenol (40-120%)</i>					82 %				
<i>Surrogate: 2-Fluorobiphenyl (50-120%)</i>					73 %				
<i>Surrogate: 2-Fluorophenol (30-120%)</i>					63 %				
<i>Surrogate: Nitrobenzene-d5 (45-120%)</i>					72 %				
<i>Surrogate: Phenol-d6 (35-120%)</i>					64 %				
<i>Surrogate: Terphenyl-d14 (50-125%)</i>					84 %				

TestAmerica Irvine

Debby Wilson
 Project Manager

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MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 019

Report Number: IUA0604

Sampled: 01/06/11-01/07/11
Received: 01/06/11

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUA0604-03 (Outfall 019 (Composite) - Water) - cont.					Sampled: 01/07/11				
Reporting Units: ug/l									
alpha-BHC	EPA 608	11A0912	0.0024	0.0094	ND	0.943	CN	01/11/11	
<i>Surrogate: Decachlorobiphenyl (45-120%)</i>					84 %				
<i>Surrogate: Tetrachloro-m-xylene (35-115%)</i>					74 %				

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Report Number: IUA0604

Sampled: 01/06/11-01/07/11
Received: 01/06/11

HEXANE EXTRACTABLE MATERIAL

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUA0604-01 (Outfall 019 - Water)					Sampled: 01/06/11				
Reporting Units: mg/l									
Hexane Extractable Material (Oil & Grease)	EPA 1664A	11A1847	1.3	4.7	ND	1	DA	01/18/11	

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Report Number: IUA0604

Sampled: 01/06/11-01/07/11
 Received: 01/06/11

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUA0604-03 (Outfall 019 (Composite) - Water)					Sampled: 01/07/11				
Reporting Units: mg/l									
Hardness (as CaCO3)	SM2340B	[CALC]		0.33	40	1	VRS	01/12/11	
Calcium	EPA 200.7	11A0931	0.050	0.10	16	1	VRS	01/12/11	MHA
Magnesium	EPA 200.7	11A0931	0.012	0.020	0.056	1	VRS	01/12/11	
Sample ID: IUA0604-03 (Outfall 019 (Composite) - Water)					Sampled: 01/07/11				
Reporting Units: ug/l									
Mercury	EPA 245.1	11A0934	0.10	0.20	ND	1	DB	01/10/11	
Cadmium	EPA 200.8	11A0916	0.10	1.0	ND	1	RDC	01/11/11	
Zinc	EPA 200.7	11A0931	6.00	20.0	50.2	1	VRS	01/12/11	
Copper	EPA 200.8	11A0916	0.500	2.00	2.61	1	RDC	01/11/11	
Lead	EPA 200.8	11A0916	0.20	1.0	ND	1	RDC	01/11/11	
Selenium	EPA 200.8	11A0916	0.50	2.0	ND	1	RDC	01/11/11	

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Report Number: IUA0604

Sampled: 01/06/11-01/07/11
 Received: 01/06/11

DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUA0604-03 (Outfall 019 (Composite) - Water) - cont.					Sampled: 01/07/11				
Reporting Units: mg/l									
Hardness as CaCO3	SM2340B-Diss	[CALC]		0.33	38	1	DP	01/12/11	
Calcium	EPA 200.7-Diss	11A1039	0.050	0.10	15	1	DP	01/12/11	
Magnesium	EPA 200.7-Diss	11A1039	0.012	0.020	0.058	1	DP	01/12/11	
Sample ID: IUA0604-03 (Outfall 019 (Composite) - Water)					Sampled: 01/07/11				
Reporting Units: ug/l									
Mercury	EPA 245.1-Diss	11A0940	0.10	0.20	ND	1	DB	01/10/11	
Cadmium	EPA 200.8-Diss	11A1040	0.10	1.0	ND	1	RDC	01/12/11	
Zinc	EPA 200.7-Diss	11A1039	6.00	20.0	56.0	1	DP	01/12/11	
Copper	EPA 200.8-Diss	11A1040	0.500	2.00	1.12	1	RDC	01/13/11	Ja
Lead	EPA 200.8-Diss	11A1040	0.20	1.0	ND	1	RDC	01/12/11	
Selenium	EPA 200.8-Diss	11A1040	0.50	2.0	ND	1	RDC	01/12/11	

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Report Number: IUA0604

Sampled: 01/06/11-01/07/11
 Received: 01/06/11

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUA0604-03 (Outfall 019 (Composite) - Water) - cont.					Sampled: 01/07/11				
Reporting Units: mg/l									
Ammonia-N (Distilled)	SM4500NH3-C	11A1264	0.500	0.500	ND	1	TMK	01/12/11	
Biochemical Oxygen Demand	SM5210B	11A0802	0.50	2.0	ND	1	XL	01/13/11	
Chloride	EPA 300.0	11A0682	2.5	5.0	51	10	NN	01/07/11	
Nitrate-N	EPA 300.0	11A0682	0.060	0.11	0.069	1	NN	01/07/11	Ja
Nitrite-N	EPA 300.0	11A0682	0.090	0.15	ND	1	NN	01/07/11	
Nitrate/Nitrite-N	EPA 300.0	11A0682	0.15	0.26	ND	1	NN	01/07/11	
Sulfate	EPA 300.0	11A0682	2.0	5.0	100	10	NN	01/07/11	
Surfactants (MBAS)	SM5540-C	11A0759	0.050	0.10	ND	1	EL	01/07/11	
Total Dissolved Solids	SM2540C	11A0837	1.0	10	410	1	MC	01/10/11	
Total Organic Carbon	SM5310B	11A0832	0.50	1.0	ND	1	FZ	01/10/11	
Total Suspended Solids	SM 2540D	11A1276	1.0	10	ND	1	DK	01/12/11	

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Project ID: Routine Outfall 019

Report Number: IUA0604

Sampled: 01/06/11-01/07/11
 Received: 01/06/11

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUA0604-01 (Outfall 019 - Water)					Sampled: 01/06/11				
Reporting Units: ml/l									
Total Settleable Solids	SM2540F	11A0688	0.10	0.10	ND	1	RRZ	01/07/11	
Sample ID: IUA0604-03 (Outfall 019 (Composite) - Water)					Sampled: 01/07/11				
Reporting Units: NTU									
Turbidity	EPA 180.1	11A0811	0.040	1.0	0.26	1	AC1	01/08/11	Ja
Sample ID: IUA0604-03 (Outfall 019 (Composite) - Water)					Sampled: 01/07/11				
Reporting Units: ug/l									
Perchlorate	EPA 314.0	11A1181	0.90	4.0	ND	1	MN	01/12/11	
Total Cyanide	SM4500CN-E	11A1083	2.2	5.0	ND	1	HH	01/11/11	
Sample ID: IUA0604-01 (Outfall 019 - Water)					Sampled: 01/06/11				
Reporting Units: umhos/cm @ 25C									
Specific Conductance	EPA 120.1	11A0638	1.0	1.0	760	1	MC	01/07/11	

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Report Number: IUA0604

Sampled: 01/06/11-01/07/11
 Received: 01/06/11

8661

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUA0604-03 (Outfall 019 (Composite) - Water)					Sampled: 01/07/11				
Reporting Units: pCi/L									
Uranium, Total	8661	8661		1	0.065	1	CSS	02/01/11	Jb
Sample ID: IUA0604-04 (Trip Blank - Water)					Sampled: 01/07/11				
Reporting Units: pCi/L									
Uranium, Total	8661	8661		1	ND	1	CSS	02/01/11	U

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Project ID: Routine Outfall 019

Report Number: IUA0604

Sampled: 01/06/11-01/07/11
 Received: 01/06/11

900

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUA0604-03 (Outfall 019 (Composite) - Water)					Sampled: 01/07/11				
Reporting Units: pCi/L									
Gross Alpha	900	8661		3	0.496	1	KT	01/19/11	U
Gross Beta	900	8661		4	0.161	1	KT	01/19/11	U
Sample ID: IUA0604-04 (Trip Blank - Water)					Sampled: 01/07/11				
Reporting Units: pCi/L									
Gross Alpha	900	8661		3	-0.068	1	KT	01/21/11	U
Gross Beta	900	8661		4	-0.371	1	KT	01/21/11	U

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Report Number: IUA0604

Sampled: 01/06/11-01/07/11
 Received: 01/06/11

901.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUA0604-03 (Outfall 019 (Composite) - Water)					Sampled: 01/07/11				
Reporting Units: pCi/L									
Cesium-137	901.1	8661		20	ND	1	LS	01/17/11	U
Potassium-40	901.1	8661		25	ND	1	LS	01/17/11	U
Sample ID: IUA0604-04 (Trip Blank - Water)					Sampled: 01/07/11				
Reporting Units: pCi/L									
Cesium-137	901.1	8661		20	ND	1	LS	01/20/11	U
Potassium-40	901.1	8661		25	ND	1	LS	01/20/11	U

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Sampled: 01/06/11-01/07/11
 Received: 01/06/11

903.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUA0604-03 (Outfall 019 (Composite) - Water)					Sampled: 01/07/11				
Reporting Units: pCi/L									
Radium-226	903.1	8661		1	0.448	1	ASM	01/27/11	U
Sample ID: IUA0604-04 (Trip Blank - Water)					Sampled: 01/07/11				
Reporting Units: pCi/L									
Radium-226	903.1	8661		1	0.056	1	ASM	01/27/11	U

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Sampled: 01/06/11-01/07/11
Received: 01/06/11

904

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUA0604-03 (Outfall 019 (Composite) - Water)					Sampled: 01/07/11				
Reporting Units: pCi/L									
Radium-228	904	8661		1	0.17	1	ASM	01/27/11	U
Sample ID: IUA0604-04 (Trip Blank - Water)					Sampled: 01/07/11				
Reporting Units: pCi/L									
Radium-228	904	8661		1	0.072	1	ASM	01/27/11	U

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Report Number: IUA0604

Sampled: 01/06/11-01/07/11
Received: 01/06/11

905

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUA0604-03 (Outfall 019 (Composite) - Water)					Sampled: 01/07/11				
Reporting Units: pCi/L									
Strontium-90	905	8661		2	0.051	1	TSC	01/26/11	U
Sample ID: IUA0604-04 (Trip Blank - Water)					Sampled: 01/07/11				
Reporting Units: pCi/L									
Strontium-90	905	8661		2	-0.3	1	TSC	01/26/11	U

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Report Number: IUA0604

Sampled: 01/06/11-01/07/11
Received: 01/06/11

906

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUA0604-03 (Outfall 019 (Composite) - Water)					Sampled: 01/07/11				
Reporting Units: pCi/L									
Tritium	906	8661		500	-18.9	1	JO	01/27/11	U

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Project ID: Routine Outfall 019

Report Number: IUA0604

Sampled: 01/06/11-01/07/11
 Received: 01/06/11

EPA-5 1613Bx

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUA0604-03 (Outfall 019 (Composite) - Water) - cont.					Sampled: 01/07/11				
Reporting Units: ug/L									
1,2,3,4,6,7,8-HpCDD	EPA-5 1613B	1011239	0.0000017	0.00005	2.5e-006	0.97	GV	01/12/11	J, Q, Ba
1,2,3,4,6,7,8-HpCDF	EPA-5 1613B	1011239	0.0000013	0.00005	ND	0.97	GV	01/12/11	
1,2,3,4,7,8,9-HpCDF	EPA-5 1613B	1011239	0.0000022	0.00005	ND	0.97	GV	01/12/11	
1,2,3,4,7,8-HxCDD	EPA-5 1613B	1011239	0.0000014	0.00005	ND	0.97	GV	01/12/11	
1,2,3,4,7,8-HxCDF	EPA-5 1613B	1011239	0.0000012	0.00005	ND	0.97	GV	01/12/11	
1,2,3,6,7,8-HxCDD	EPA-5 1613B	1011239	0.0000013	0.00005	ND	0.97	GV	01/12/11	
1,2,3,6,7,8-HxCDF	EPA-5 1613B	1011239	0.0000011	0.00005	ND	0.97	GV	01/12/11	
1,2,3,7,8,9-HxCDD	EPA-5 1613B	1011239	0.0000012	0.00005	ND	0.97	GV	01/12/11	
1,2,3,7,8,9-HxCDF	EPA-5 1613B	1011239	0.0000014	0.00005	ND	0.97	GV	01/12/11	
1,2,3,7,8-PeCDD	EPA-5 1613B	1011239	0.0000019	0.00005	ND	0.97	GV	01/12/11	
1,2,3,7,8-PeCDF	EPA-5 1613B	1011239	0.0000019	0.00005	ND	0.97	GV	01/12/11	
2,3,4,6,7,8-HxCDF	EPA-5 1613B	1011239	0.0000001	0.00005	ND	0.97	GV	01/12/11	
2,3,4,7,8-PeCDF	EPA-5 1613B	1011239	0.0000002	0.00005	ND	0.97	GV	01/12/11	
2,3,7,8-TCDD	EPA-5 1613B	1011239	0.0000001	0.00001	ND	0.97	GV	01/12/11	
2,3,7,8-TCDF	EPA-5 1613B	1011239	0.0000024	0.00001	ND	0.97	GV	01/12/11	
OCDD	EPA-5 1613B	1011239	0.0000032	0.0001	9e-006	0.97	GV	01/12/11	J, Q, Ba
OCDF	EPA-5 1613B	1011239	0.0000015	0.0001	1.8e-006	0.97	GV	01/12/11	J, Q, Ba
Total HpCDD	EPA-5 1613B	1011239	0.0000017	0.00005	2.5e-006	0.97	GV	01/12/11	J, Q, Ba
Total HpCDF	EPA-5 1613B	1011239	0.0000013	0.00005	ND	0.97	GV	01/12/11	
Total HxCDD	EPA-5 1613B	1011239	0.0000012	0.00005	ND	0.97	GV	01/12/11	
Total HxCDF	EPA-5 1613B	1011239	0.0000001	0.00005	ND	0.97	GV	01/12/11	
Total PeCDD	EPA-5 1613B	1011239	0.0000019	0.00005	ND	0.97	GV	01/12/11	
Total PeCDF	EPA-5 1613B	1011239	0.0000019	0.00005	ND	0.97	GV	01/12/11	
Total TCDD	EPA-5 1613B	1011239	0.0000001	0.00001	ND	0.97	GV	01/12/11	
Total TCDF	EPA-5 1613B	1011239	0.0000024	0.00001	ND	0.97	GV	01/12/11	

Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (23-140%)	74 %
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (28-143%)	93 %
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF (26-138%)	78 %
Surrogate: 13C-1,2,3,4,7,8-HxCDD (32-141%)	91 %
Surrogate: 13C-1,2,3,4,7,8-HxCDF (26-152%)	107 %
Surrogate: 13C-1,2,3,6,7,8-HxCDD (28-130%)	93 %
Surrogate: 13C-1,2,3,6,7,8-HxCDF (26-123%)	94 %
Surrogate: 13C-1,2,3,7,8,9-HxCDF (29-147%)	102 %
Surrogate: 13C-1,2,3,7,8-PeCDD (25-181%)	81 %
Surrogate: 13C-1,2,3,7,8-PeCDF (24-185%)	85 %
Surrogate: 13C-2,3,4,6,7,8-HxCDF (28-136%)	107 %
Surrogate: 13C-2,3,4,7,8-PeCDF (21-178%)	88 %
Surrogate: 13C-2,3,7,8-TCDD (25-164%)	89 %
Surrogate: 13C-2,3,7,8-TCDF (24-169%)	97 %
Surrogate: 13C-OCDD (17-157%)	77 %

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Report Number: IUA0604

Sampled: 01/06/11-01/07/11
Received: 01/06/11

EPA-5 1613Bx

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUA0604-03 (Outfall 019 (Composite) - Water) - cont.					Sampled: 01/07/11				
Reporting Units: ug/L									
<i>Surrogate: 37Cl4-2,3,7,8-TCDD (35-197%)</i>					93 %				

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Report Number: IUA0604

Sampled: 01/06/11-01/07/11
Received: 01/06/11

SHORT HOLD TIME DETAIL REPORT

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: Outfall 019 (IUA0604-01) - Water					
SM2540F	2	01/06/2011 08:35	01/06/2011 16:15	01/07/2011 11:00	01/07/2011 11:00
Sample ID: Outfall 019 (Composite) (IUA0604-03) - Water					
EPA 180.1	2	01/07/2011 08:59	01/06/2011 16:15	01/08/2011 16:20	01/08/2011 16:20
EPA 300.0	2	01/07/2011 08:59	01/06/2011 16:15	01/07/2011 15:00	01/07/2011 19:17
SM5210B	2	01/07/2011 08:59	01/06/2011 16:15	01/08/2011 11:23	01/13/2011 09:00
SM5540-C	2	01/07/2011 08:59	01/06/2011 16:15	01/07/2011 19:06	01/07/2011 20:13

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Report Number: IUA0604

Sampled: 01/06/11-01/07/11
 Received: 01/06/11

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A1662 Extracted: 01/16/11										
Blank Analyzed: 01/16/2011 (11A1662-BLK1)										
Benzene	ND	0.50	ug/l							
Carbon tetrachloride	ND	0.50	ug/l							
Chloroform	2.20	0.50	ug/l							B
1,1-Dichloroethane	ND	0.50	ug/l							
1,2-Dichloroethane	ND	0.50	ug/l							
1,1-Dichloroethene	ND	0.50	ug/l							
Ethylbenzene	ND	0.50	ug/l							
Tetrachloroethene	ND	0.50	ug/l							
Toluene	ND	0.50	ug/l							
1,1,1-Trichloroethane	ND	0.50	ug/l							
1,1,2-Trichloroethane	ND	0.50	ug/l							
Trichloroethene	ND	0.50	ug/l							
Trichlorofluoromethane	ND	0.50	ug/l							
Trichlorotrifluoroethane (Freon 113)	ND	5.0	ug/l							
Vinyl chloride	ND	0.50	ug/l							
Xylenes, Total	ND	1.5	ug/l							
<i>Surrogate: 4-Bromofluorobenzene</i>	22.4		ug/l	25.0		90	80-120			
<i>Surrogate: Dibromofluoromethane</i>	23.9		ug/l	25.0		96	80-120			
<i>Surrogate: Toluene-d8</i>	25.2		ug/l	25.0		101	80-120			
LCS Analyzed: 01/16/2011 (11A1662-BS1)										
Benzene	28.2	0.50	ug/l	25.0		113	70-120			
Carbon tetrachloride	30.1	0.50	ug/l	25.0		120	65-140			
Chloroform	26.3	0.50	ug/l	25.0		105	70-130			
1,1-Dichloroethane	28.8	0.50	ug/l	25.0		115	70-125			
1,2-Dichloroethane	29.2	0.50	ug/l	25.0		117	60-140			
1,1-Dichloroethene	28.4	0.50	ug/l	25.0		113	70-125			
Ethylbenzene	26.5	0.50	ug/l	25.0		106	75-125			
Tetrachloroethene	25.7	0.50	ug/l	25.0		103	70-125			
Toluene	27.7	0.50	ug/l	25.0		111	70-120			
1,1,1-Trichloroethane	30.1	0.50	ug/l	25.0		120	65-135			
1,1,2-Trichloroethane	27.5	0.50	ug/l	25.0		110	70-125			
Trichloroethene	27.4	0.50	ug/l	25.0		110	70-125			
Trichlorofluoromethane	28.5	0.50	ug/l	25.0		114	65-145			
Vinyl chloride	23.8	0.50	ug/l	25.0		95	55-135			
Xylenes, Total	81.3	1.5	ug/l	75.0		108	70-125			

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Project ID: Routine Outfall 019

Report Number: IUA0604

Sampled: 01/06/11-01/07/11
Received: 01/06/11

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A1662 Extracted: 01/16/11										
LCS Analyzed: 01/16/2011 (11A1662-BS1)										
Surrogate: 4-Bromofluorobenzene	23.4		ug/l	25.0		94	80-120			
Surrogate: Dibromofluoromethane	24.5		ug/l	25.0		98	80-120			
Surrogate: Toluene-d8	24.6		ug/l	25.0		99	80-120			
Matrix Spike Analyzed: 01/16/2011 (11A1662-MS1)					Source: IUA0875-04					
Benzene	28.5	0.50	ug/l	25.0	ND	114	65-125			
Carbon tetrachloride	31.7	0.50	ug/l	25.0	ND	127	65-140			
Chloroform	27.5	0.50	ug/l	25.0	ND	110	65-135			
1,1-Dichloroethane	29.6	0.50	ug/l	25.0	ND	118	65-130			
1,2-Dichloroethane	31.9	0.50	ug/l	25.0	ND	128	60-140			
1,1-Dichloroethene	28.9	0.50	ug/l	25.0	ND	115	60-130			
Ethylbenzene	27.3	0.50	ug/l	25.0	ND	109	65-130			
Tetrachloroethene	25.3	0.50	ug/l	25.0	ND	101	65-130			
Toluene	29.2	0.50	ug/l	25.0	ND	117	70-125			
1,1,1-Trichloroethane	31.5	0.50	ug/l	25.0	ND	126	65-140			
1,1,2-Trichloroethane	28.9	0.50	ug/l	25.0	ND	115	65-130			
Trichloroethene	28.6	0.50	ug/l	25.0	ND	114	65-125			
Trichlorofluoromethane	30.2	0.50	ug/l	25.0	ND	121	60-145			
Vinyl chloride	24.1	0.50	ug/l	25.0	ND	96	45-140			
Xylenes, Total	80.6	1.5	ug/l	75.0	ND	108	60-130			
Surrogate: 4-Bromofluorobenzene	23.7		ug/l	25.0		95	80-120			
Surrogate: Dibromofluoromethane	25.0		ug/l	25.0		100	80-120			
Surrogate: Toluene-d8	26.2		ug/l	25.0		105	80-120			
Matrix Spike Dup Analyzed: 01/16/2011 (11A1662-MSD1)					Source: IUA0875-04					
Benzene	23.1	0.50	ug/l	25.0	ND	93	65-125	21	20	R
Carbon tetrachloride	26.2	0.50	ug/l	25.0	ND	105	65-140	19	25	
Chloroform	23.8	0.50	ug/l	25.0	ND	95	65-135	14	20	
1,1-Dichloroethane	26.2	0.50	ug/l	25.0	ND	105	65-130	12	20	
1,2-Dichloroethane	26.4	0.50	ug/l	25.0	ND	106	60-140	19	20	
1,1-Dichloroethene	25.7	0.50	ug/l	25.0	ND	103	60-130	12	20	
Ethylbenzene	23.2	0.50	ug/l	25.0	ND	93	65-130	16	20	
Tetrachloroethene	21.9	0.50	ug/l	25.0	ND	88	65-130	14	20	
Toluene	23.9	0.50	ug/l	25.0	ND	96	70-125	20	20	
1,1,1-Trichloroethane	26.4	0.50	ug/l	25.0	ND	106	65-140	17	20	
1,1,2-Trichloroethane	24.7	0.50	ug/l	25.0	ND	99	65-130	15	25	
Trichloroethene	23.8	0.50	ug/l	25.0	ND	95	65-125	18	20	

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Report Number: IUA0604

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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A1662 Extracted: 01/16/11										
Matrix Spike Dup Analyzed: 01/16/2011 (11A1662-MSD1)					Source: IUA0875-04					
Trichlorofluoromethane	25.7	0.50	ug/l	25.0	ND	103	60-145	16	25	
Vinyl chloride	21.4	0.50	ug/l	25.0	ND	86	45-140	12	30	
Xylenes, Total	67.8	1.5	ug/l	75.0	ND	90	60-130	17	20	
Surrogate: 4-Bromofluorobenzene	22.9		ug/l	25.0		92	80-120			
Surrogate: Dibromofluoromethane	25.2		ug/l	25.0		101	80-120			
Surrogate: Toluene-d8	24.7		ug/l	25.0		99	80-120			

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METHOD BLANK/QC DATA

ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A1272 Extracted: 01/12/11										
Blank Analyzed: 01/18/2011 (11A1272-BLK1)										
Bis(2-ethylhexyl)phthalate	ND	5.00	ug/l							
2,4-Dinitrotoluene	ND	5.00	ug/l							
N-Nitrosodimethylamine	7.26	5.00	ug/l							
Pentachlorophenol	ND	5.00	ug/l							
2,4,6-Trichlorophenol	ND	6.00	ug/l							
Surrogate: 2,4,6-Tribromophenol	16.3		ug/l	20.0		82	40-120			
Surrogate: 2-Fluorobiphenyl	8.08		ug/l	10.0		81	50-120			
Surrogate: 2-Fluorophenol	13.3		ug/l	20.0		67	30-120			
Surrogate: Nitrobenzene-d5	7.40		ug/l	10.0		74	45-120			
Surrogate: Phenol-d6	13.2		ug/l	20.0		66	35-120			
Surrogate: Terphenyl-d14	8.90		ug/l	10.0		89	50-125			
LCS Analyzed: 01/18/2011 (11A1272-BS1)										
Bis(2-ethylhexyl)phthalate	8.52	5.00	ug/l	10.0		85	65-130			MNR1
2,4-Dinitrotoluene	8.16	5.00	ug/l	10.0		82	65-120			
N-Nitrosodimethylamine	13.9	5.00	ug/l	10.0		139	45-120			L
Pentachlorophenol	2.96	5.00	ug/l	10.0		30	24-121			Ja
2,4,6-Trichlorophenol	7.70	6.00	ug/l	10.0		77	55-120			
Surrogate: 2,4,6-Tribromophenol	17.2		ug/l	20.0		86	40-120			
Surrogate: 2-Fluorobiphenyl	7.64		ug/l	10.0		76	50-120			
Surrogate: 2-Fluorophenol	12.1		ug/l	20.0		60	30-120			
Surrogate: Nitrobenzene-d5	7.18		ug/l	10.0		72	45-120			
Surrogate: Phenol-d6	13.1		ug/l	20.0		65	35-120			
Surrogate: Terphenyl-d14	7.92		ug/l	10.0		79	50-125			
LCS Dup Analyzed: 01/18/2011 (11A1272-BS1)										
Bis(2-ethylhexyl)phthalate	8.98	5.00	ug/l	10.0		90	65-130	5	20	
2,4-Dinitrotoluene	8.54	5.00	ug/l	10.0		85	65-120	5	20	
N-Nitrosodimethylamine	14.3	5.00	ug/l	10.0		143	45-120	2	20	L
Pentachlorophenol	4.40	5.00	ug/l	10.0		44	24-121	39	25	R-7, Ja
2,4,6-Trichlorophenol	8.40	6.00	ug/l	10.0		84	55-120	9	30	
Surrogate: 2,4,6-Tribromophenol	18.4		ug/l	20.0		92	40-120			
Surrogate: 2-Fluorobiphenyl	8.10		ug/l	10.0		81	50-120			
Surrogate: 2-Fluorophenol	12.2		ug/l	20.0		61	30-120			
Surrogate: Nitrobenzene-d5	7.88		ug/l	10.0		79	45-120			
Surrogate: Phenol-d6	13.8		ug/l	20.0		69	35-120			
Surrogate: Terphenyl-d14	8.48		ug/l	10.0		85	50-125			

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METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0912 Extracted: 01/10/11										
Blank Analyzed: 01/11/2011 (11A0912-BLK1)										
alpha-BHC	ND	0.010	ug/l							
Surrogate: Decachlorobiphenyl	0.364		ug/l	0.500		73	45-120			
Surrogate: Tetrachloro-m-xylene	0.321		ug/l	0.500		64	35-115			
LCS Analyzed: 01/11/2011 (11A0912-BS1)										
alpha-BHC	0.438	0.010	ug/l	0.500		88	45-115			
Surrogate: Decachlorobiphenyl	0.439		ug/l	0.500		88	45-120			
Surrogate: Tetrachloro-m-xylene	0.408		ug/l	0.500		82	35-115			
Matrix Spike Analyzed: 01/11/2011 (11A0912-MS1)					Source: IUA0602-17					
alpha-BHC	0.374	0.0094	ug/l	0.472	ND	79	40-120			
Surrogate: Decachlorobiphenyl	0.417		ug/l	0.472		89	45-120			
Surrogate: Tetrachloro-m-xylene	0.328		ug/l	0.472		70	35-115			
Matrix Spike Dup Analyzed: 01/11/2011 (11A0912-MSD1)					Source: IUA0602-17					
alpha-BHC	0.413	0.0094	ug/l	0.472	ND	88	40-120	10	30	
Surrogate: Decachlorobiphenyl	0.382		ug/l	0.472		81	45-120			
Surrogate: Tetrachloro-m-xylene	0.375		ug/l	0.472		80	35-115			

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 Received: 01/06/11

METHOD BLANK/QC DATA

HEXANE EXTRACTABLE MATERIAL

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A1847 Extracted: 01/18/11										
Blank Analyzed: 01/18/2011 (11A1847-BLK1)										
Hexane Extractable Material (Oil & Grease)	ND	5.0	mg/l							
LCS Analyzed: 01/18/2011 (11A1847-BS1)										
Hexane Extractable Material (Oil & Grease)	18.9	5.0	mg/l	20.0		94	78-114			MNR1
LCS Dup Analyzed: 01/18/2011 (11A1847-BSD1)										
Hexane Extractable Material (Oil & Grease)	18.7	5.0	mg/l	20.0		94	78-114	1	11	

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0916 Extracted: 01/10/11										
Blank Analyzed: 01/11/2011 (11A0916-BLK1)										
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Selenium	ND	2.0	ug/l							
LCS Analyzed: 01/11/2011 (11A0916-BS1)										
Cadmium	83.5	1.0	ug/l	80.0		104	85-115			
Copper	85.1	2.00	ug/l	80.0		106	85-115			
Lead	81.6	1.0	ug/l	80.0		102	85-115			
Selenium	81.8	2.0	ug/l	80.0		102	85-115			
Matrix Spike Analyzed: 01/11/2011 (11A0916-MS1) Source: IUA0642-04										
Cadmium	79.9	1.0	ug/l	80.0	0.269	99	70-130			
Copper	80.6	2.00	ug/l	80.0	10.6	87	70-130			
Lead	81.1	1.0	ug/l	80.0	1.15	100	70-130			
Selenium	153	2.0	ug/l	80.0	63.5	111	70-130			
Matrix Spike Analyzed: 01/11/2011 (11A0916-MS2) Source: IUA0604-03										
Cadmium	82.8	1.0	ug/l	80.0	ND	104	70-130			
Copper	80.1	2.00	ug/l	80.0	2.61	97	70-130			
Lead	83.8	1.0	ug/l	80.0	ND	105	70-130			
Selenium	84.7	2.0	ug/l	80.0	ND	106	70-130			
Matrix Spike Dup Analyzed: 01/11/2011 (11A0916-MSD1) Source: IUA0642-04										
Cadmium	81.0	1.0	ug/l	80.0	0.269	101	70-130	1	20	
Copper	81.9	2.00	ug/l	80.0	10.6	89	70-130	2	20	
Lead	81.3	1.0	ug/l	80.0	1.15	100	70-130	0.3	20	
Selenium	152	2.0	ug/l	80.0	63.5	110	70-130	0.5	20	

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0931 Extracted: 01/10/11										
Blank Analyzed: 01/12/2011 (11A0931-BLK1)										
Calcium	ND	0.10	mg/l							
Magnesium	ND	0.020	mg/l							
Zinc	ND	20.0	ug/l							
LCS Analyzed: 01/12/2011 (11A0931-BS1)										
Calcium	0.557	0.10	mg/l	0.500		111	85-115			
Magnesium	0.520	0.020	mg/l	0.500		104	85-115			
Zinc	517	20.0	ug/l	500		103	85-115			
Matrix Spike Analyzed: 01/12/2011 (11A0931-MS1) Source: IUA0604-03										
Calcium	16.4	0.10	mg/l	0.500	16.0	83	70-130			MHA
Magnesium	0.589	0.020	mg/l	0.500	0.0562	107	70-130			
Zinc	583	20.0	ug/l	500	50.2	106	70-130			
Matrix Spike Analyzed: 01/12/2011 (11A0931-MS2) Source: IUA0614-01										
Calcium	58.4	0.10	mg/l	0.500	58.4	-6	70-130			MHA
Magnesium	9.90	0.020	mg/l	0.500	9.56	67	70-130			MHA
Zinc	576	20.0	ug/l	500	50.4	105	70-130			
Matrix Spike Dup Analyzed: 01/12/2011 (11A0931-MSD1) Source: IUA0604-03										
Calcium	16.1	0.10	mg/l	0.500	16.0	33	70-130	2	20	MHA
Magnesium	0.581	0.020	mg/l	0.500	0.0562	105	70-130	1	20	
Zinc	575	20.0	ug/l	500	50.2	105	70-130	1	20	

Batch: 11A0934 Extracted: 01/10/11

Blank Analyzed: 01/10/2011 (11A0934-BLK1)

Mercury ND 0.20 ug/l

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0934 Extracted: 01/10/11										
LCS Analyzed: 01/10/2011 (11A0934-BS1)										
Mercury	7.90	0.20	ug/l	8.00		99	85-115			
Matrix Spike Analyzed: 01/10/2011 (11A0934-MS1)										
Mercury	7.60	0.20	ug/l	8.00	ND	95	70-130			
Matrix Spike Dup Analyzed: 01/10/2011 (11A0934-MSD1)										
Mercury	7.54	0.20	ug/l	8.00	ND	94	70-130	0.8	20	

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METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0940 Extracted: 01/10/11										
Blank Analyzed: 01/10/2011 (11A0940-BLK1)										
Mercury	ND	0.20	ug/l							
LCS Analyzed: 01/10/2011 (11A0940-BS1)										
Mercury	7.98	0.20	ug/l	8.00		100	85-115			
Matrix Spike Analyzed: 01/10/2011 (11A0940-MS1)										
					Source: IUA0500-01					
Mercury	7.88	0.20	ug/l	8.00	ND	98	70-130			
Matrix Spike Dup Analyzed: 01/10/2011 (11A0940-MSD1)										
					Source: IUA0500-01					
Mercury	7.89	0.20	ug/l	8.00	ND	99	70-130	0.2	20	
Batch: 11A1039 Extracted: 01/11/11										
Blank Analyzed: 01/12/2011 (11A1039-BLK1)										
Calcium	ND	0.10	mg/l							
Magnesium	ND	0.020	mg/l							
Zinc	ND	20.0	ug/l							
LCS Analyzed: 01/12/2011 (11A1039-BS1)										
Calcium	0.560	0.10	mg/l	0.500		112	85-115			
Magnesium	0.539	0.020	mg/l	0.500		108	85-115			
Zinc	531	20.0	ug/l	500		106	85-115			
Matrix Spike Analyzed: 01/12/2011 (11A1039-MS1)										
					Source: IUA0603-01					
Calcium	117	0.10	mg/l	0.500	117	-146	70-130			MHA
Magnesium	29.4	0.020	mg/l	0.500	29.7	-56	70-130			MHA
Zinc	511	20.0	ug/l	500	ND	102	70-130			

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DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A1039 Extracted: 01/11/11										
Matrix Spike Analyzed: 01/12/2011 (11A1039-MS2)					Source: IUA0603-02					
Calcium	240	0.10	mg/l	0.500	236	613	70-130			MHA
Magnesium	71.0	0.020	mg/l	0.500	69.6	263	70-130			MHA
Zinc	505	20.0	ug/l	500	ND	101	70-130			
Matrix Spike Dup Analyzed: 01/12/2011 (11A1039-MSD1)					Source: IUA0603-01					
Calcium	118	0.10	mg/l	0.500	117	172	70-130	1	20	MHA
Magnesium	30.3	0.020	mg/l	0.500	29.7	138	70-130	3	20	MHA
Zinc	518	20.0	ug/l	500	ND	104	70-130	1	20	
Batch: 11A1040 Extracted: 01/11/11										
Blank Analyzed: 01/12/2011 (11A1040-BLK1)										
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Selenium	ND	2.0	ug/l							
LCS Analyzed: 01/12/2011 (11A1040-BS1)										
Cadmium	77.7	1.0	ug/l	80.0		97	85-115			
Copper	82.8	2.00	ug/l	80.0		104	85-115			
Lead	85.6	1.0	ug/l	80.0		107	85-115			
Selenium	76.0	2.0	ug/l	80.0		95	85-115			
Matrix Spike Analyzed: 01/12/2011 (11A1040-MS1)					Source: IUA0617-01					
Cadmium	76.6	1.0	ug/l	80.0	ND	96	70-130			
Copper	82.5	2.00	ug/l	80.0	1.56	101	70-130			
Lead	82.9	1.0	ug/l	80.0	ND	104	70-130			
Selenium	74.7	2.0	ug/l	80.0	ND	93	70-130			

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DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<u>Batch: 11A1040 Extracted: 01/11/11</u>										
Matrix Spike Analyzed: 01/12/2011 (11A1040-MS2)					Source: IUA0500-02					
Cadmium	74.4	1.0	ug/l	80.0	ND	93	70-130			
Copper	82.2	2.00	ug/l	80.0	1.69	101	70-130			
Lead	80.7	1.0	ug/l	80.0	ND	101	70-130			
Selenium	76.9	2.0	ug/l	80.0	1.60	94	70-130			
Matrix Spike Dup Analyzed: 01/12/2011 (11A1040-MSD1)					Source: IUA0617-01					
Cadmium	76.3	1.0	ug/l	80.0	ND	95	70-130	0.5	20	
Copper	82.9	2.00	ug/l	80.0	1.56	102	70-130	0.5	20	
Lead	80.6	1.0	ug/l	80.0	ND	101	70-130	3	20	
Selenium	75.0	2.0	ug/l	80.0	ND	94	70-130	0.5	20	

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INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0638 Extracted: 01/07/11										
Blank Analyzed: 01/07/2011 (11A0638-BLK1)										
Specific Conductance	ND	1.0	umhos/cm @ 25C							
LCS Analyzed: 01/07/2011 (11A0638-BS1)										
Specific Conductance	1440	1.0	umhos/cm @ 25C	1410		102	90-110			
Duplicate Analyzed: 01/07/2011 (11A0638-DUP1)										
Specific Conductance	1800	1.0	umhos/cm @ 25C		1790			0.3	5	
Batch: 11A0682 Extracted: 01/07/11										
Blank Analyzed: 01/07/2011 (11A0682-BLK1)										
Chloride	ND	0.50	mg/l							
Nitrate-N	ND	0.11	mg/l							
Nitrite-N	ND	0.15	mg/l							
Nitrate/Nitrite-N	ND	0.26	mg/l							
Sulfate	ND	0.50	mg/l							
LCS Analyzed: 01/07/2011 (11A0682-BS1)										
Chloride	4.97	0.50	mg/l	5.00		99	90-110			M-3
Nitrate-N	1.21	0.11	mg/l	1.13		107	90-110			
Nitrite-N	1.52	0.15	mg/l	1.52		100	90-110			
Sulfate	10.1	0.50	mg/l	10.0		101	90-110			M-3
Matrix Spike Analyzed: 01/07/2011 (11A0682-MS1)										
Nitrate-N	12.0	0.55	mg/l	1.13	10.6	122	80-120			MHA
Nitrite-N	2.18	0.75	mg/l	1.52	ND	143	80-120			MI

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INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0682 Extracted: 01/07/11										
Matrix Spike Analyzed: 01/07/2011 (11A0682-MS2)					Source: IUA0725-05					
Chloride	93.2	5.0	mg/l	50.0	46.6	93	80-120			
Nitrate-N	12.6	1.1	mg/l	11.3	1.60	98	80-120			
Nitrite-N	14.6	1.5	mg/l	15.2	ND	96	80-120			
Sulfate	164	5.0	mg/l	100	66.6	98	80-120			
Matrix Spike Dup Analyzed: 01/07/2011 (11A0682-MSD1)					Source: IUA0665-01					
Nitrate-N	12.1	0.55	mg/l	1.13	10.6	131	80-120	0.8	20	MHA
Nitrite-N	2.21	0.75	mg/l	1.52	ND	145	80-120	1	20	MI
Batch: 11A0759 Extracted: 01/07/11										
Blank Analyzed: 01/07/2011 (11A0759-BLK1)										
Surfactants (MBAS)	ND	0.10	mg/l							
LCS Analyzed: 01/07/2011 (11A0759-BS1)										
Surfactants (MBAS)	0.255	0.10	mg/l	0.250		102	90-110			
Matrix Spike Analyzed: 01/07/2011 (11A0759-MS1)					Source: IUA0573-01					
Surfactants (MBAS)	0.283	0.10	mg/l	0.250	ND	113	50-125			
Matrix Spike Dup Analyzed: 01/07/2011 (11A0759-MSD1)					Source: IUA0573-01					
Surfactants (MBAS)	0.238	0.10	mg/l	0.250	ND	95	50-125	17	20	
Batch: 11A0802 Extracted: 01/08/11										
Blank Analyzed: 01/13/2011 (11A0802-BLK1)										
Biochemical Oxygen Demand	ND	2.0	mg/l							

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INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<u>Batch: 11A0802 Extracted: 01/08/11</u>										
LCS Analyzed: 01/13/2011 (11A0802-BS1)										
Biochemical Oxygen Demand	202	100	mg/l	198		102	85-115			
LCS Dup Analyzed: 01/13/2011 (11A0802-BSD1)										
Biochemical Oxygen Demand	200	100	mg/l	198		101	85-115	0.7	20	
<u>Batch: 11A0811 Extracted: 01/08/11</u>										
Blank Analyzed: 01/08/2011 (11A0811-BLK1)										
Turbidity	ND	1.0	NTU							
Duplicate Analyzed: 01/08/2011 (11A0811-DUP1)										
Turbidity	0.280	1.0	NTU		Source: IUA0604-03 0.260			7	20	Ja
Duplicate Analyzed: 01/08/2011 (11A0811-DUP2)										
Turbidity	9.56	1.0	NTU		Source: IUA0746-01 9.52			0.4	20	
<u>Batch: 11A0832 Extracted: 01/10/11</u>										
Blank Analyzed: 01/10/2011 (11A0832-BLK1)										
Total Organic Carbon	ND	1.0	mg/l							
LCS Analyzed: 01/10/2011 (11A0832-BS1)										
Total Organic Carbon	9.93	1.0	mg/l	10.0		99	90-110			
Matrix Spike Analyzed: 01/10/2011 (11A0832-MS1)										
Total Organic Carbon	4.44	1.0	mg/l	5.00	Source: IUA0758-02 ND	89	80-120			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0832 Extracted: 01/10/11										
Matrix Spike Dup Analyzed: 01/10/2011 (11A0832-MSD1)					Source: IUA0758-02					
Total Organic Carbon	4.65	1.0	mg/l	5.00	ND	93	80-120	5	20	
Batch: 11A0837 Extracted: 01/10/11										
Blank Analyzed: 01/10/2011 (11A0837-BLK1)										
Total Dissolved Solids	ND	10	mg/l							
LCS Analyzed: 01/10/2011 (11A0837-BS1)										
Total Dissolved Solids	988	10	mg/l	1000		99	90-110			
Duplicate Analyzed: 01/10/2011 (11A0837-DUP1)					Source: IUA0725-02					
Total Dissolved Solids	547	10	mg/l		545			0.4	10	
Batch: 11A1083 Extracted: 01/11/11										
Blank Analyzed: 01/11/2011 (11A1083-BLK1)										
Total Cyanide	ND	5.0	ug/l							
LCS Analyzed: 01/11/2011 (11A1083-BS1)										
Total Cyanide	196	5.0	ug/l	200		98	90-110			
Matrix Spike Analyzed: 01/11/2011 (11A1083-MS1)					Source: IUA0671-01					
Total Cyanide	184	5.0	ug/l	200	ND	92	70-115			
Matrix Spike Dup Analyzed: 01/11/2011 (11A1083-MSD1)					Source: IUA0671-01					
Total Cyanide	183	5.0	ug/l	200	ND	91	70-115	0.7	15	

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INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A1181 Extracted: 01/12/11										
Blank Analyzed: 01/12/2011 (11A1181-BLK1)										
Perchlorate	ND	4.0	ug/l							
LCS Analyzed: 01/12/2011 (11A1181-BS1)										
Perchlorate	24.9	4.0	ug/l	25.0		100	85-115			
Matrix Spike Analyzed: 01/12/2011 (11A1181-MS1)										
Perchlorate	31.1	4.0	ug/l	25.0	6.03	100	80-120			
					Source: IUA0668-01					
Matrix Spike Dup Analyzed: 01/12/2011 (11A1181-MSD1)										
Perchlorate	32.3	4.0	ug/l	25.0	6.03	105	80-120	4	20	
Batch: 11A1264 Extracted: 01/12/11										
Blank Analyzed: 01/12/2011 (11A1264-BLK1)										
Ammonia-N (Distilled)	ND	0.500	mg/l							
LCS Analyzed: 01/12/2011 (11A1264-BS1)										
Ammonia-N (Distilled)	10.1	0.500	mg/l	10.0		101	80-115			
Matrix Spike Analyzed: 01/12/2011 (11A1264-MS1)										
Ammonia-N (Distilled)	9.80	0.500	mg/l	10.0	ND	98	70-120			
					Source: IUA0604-03					
Matrix Spike Dup Analyzed: 01/12/2011 (11A1264-MSD1)										
Ammonia-N (Distilled)	9.80	0.500	mg/l	10.0	ND	98	70-120	0	15	
Batch: 11A1276 Extracted: 01/12/11										
Blank Analyzed: 01/12/2011 (11A1276-BLK1)										
Total Suspended Solids	ND	10	mg/l							

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INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<u>Batch: 11A1276 Extracted: 01/12/11</u>										
LCS Analyzed: 01/12/2011 (11A1276-BS1)										
Total Suspended Solids	991	10	mg/l	1000		99	85-115			
Duplicate Analyzed: 01/12/2011 (11A1276-DUP1)										
Total Suspended Solids	39.0	10	mg/l		40.0			3	10	

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8661

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<u>Batch: 8661 Extracted: 02/01/11</u>										
LCS Analyzed: 02/01/2011 (S101095-03)										
Uranium, Total	57.7	1	pCi/L	56.5		102	80-120			
Blank Analyzed: 02/01/2011 (S101095-04)										
Uranium, Total	0	1	pCi/L							U
Duplicate Analyzed: 02/01/2011 (S101095-05)										
Uranium, Total	0.067	1	pCi/L		0.065			3		Jb

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METHOD BLANK/QC DATA

900

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<u>Batch: 8661 Extracted: 01/19/11</u>										
LCS Analyzed: 01/19/2011 (S101095-03)										
Gross Alpha	46.6	3	pCi/L	40.4		115	70-130			
Gross Beta	34	4	pCi/L	35		97	70-130			
Blank Analyzed: 01/19/2011 (S101095-04)										
Gross Alpha	0.096	3	pCi/L							U
Gross Beta	-0.02	4	pCi/L							U
Duplicate Analyzed: 01/19/2011 (S101095-05)										
Gross Alpha	0.394	3	pCi/L		0.496			0		U
Gross Beta	0.358	4	pCi/L		0.161			0		U

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METHOD BLANK/QC DATA

901.1

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<u>Batch: 8661 Extracted: 01/13/11</u>										
LCS Analyzed: 01/17/2011 (S101095-03)										
Cobalt-60	127	10	pCi/L	128		99	80-120			
Cesium-137	109	20	pCi/L	110		99	80-120			
Blank Analyzed: 01/17/2011 (S101095-04)										
Cesium-137	ND	20	pCi/L				-			U
Potassium-40	ND	25	pCi/L				-			U
Duplicate Analyzed: 01/18/2011 (S101095-05)										
Cesium-137	ND	20	pCi/L		0		-	0		U
Potassium-40	ND	25	pCi/L		0		-	0		U

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METHOD BLANK/QC DATA

903.1

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<u>Batch: 8661 Extracted: 01/27/11</u>										
LCS Analyzed: 01/27/2011 (S101095-03)										
Radium-226	59.1	1	pCi/L	55.7		106	80-120			
Blank Analyzed: 01/27/2011 (S101095-04)										
Radium-226	-0.097	1	pCi/L				-			U
Duplicate Analyzed: 01/27/2011 (S101095-05)										
Radium-226	0.547	1	pCi/L		0.448		-	20		Jb

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METHOD BLANK/QC DATA

904

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8661 Extracted: 01/27/11										
LCS Analyzed: 01/27/2011 (S101095-03)										
Radium-228	4.91	1	pCi/L	4.62		106	60-140			
Blank Analyzed: 01/27/2011 (S101095-04)										
Radium-228	-0.023	1	pCi/L							U
Duplicate Analyzed: 01/27/2011 (S101095-05)										
Radium-228	0.2	1	pCi/L		0.17			0		U

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METHOD BLANK/QC DATA

905

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8661 Extracted: 01/19/11										
LCS Analyzed: 01/26/2011 (S101095-03)										
Strontium-90	18	2	pCi/L	17.5	Source:	103	80-120			
Blank Analyzed: 01/26/2011 (S101095-04)										
Strontium-90	-0.233	2	pCi/L		Source:		-			U
Duplicate Analyzed: 01/26/2011 (S101095-05)										
Strontium-90	-0.159	2	pCi/L		Source: IUA0604-03	0.051	-	0		U

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906

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8661 Extracted: 01/27/11										
LCS Analyzed: 01/27/2011 (S101095-03)										
Tritium	2410	500	pCi/L	2540		95	80-120			
Blank Analyzed: 01/27/2011 (S101095-04)										
Tritium	-130	500	pCi/L							U
Duplicate Analyzed: 01/27/2011 (S101095-05)										
Tritium	-70.7	500	pCi/L					0		U

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METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1011239 Extracted: 01/11/11										
Blank Analyzed: 01/13/2011 (G1A110000239B)					Source:					
1,2,3,4,6,7,8-HpCDD	1.3e-006	0.00005	ug/L				-			J, Q
1,2,3,4,6,7,8-HpCDF	ND	0.00005	ug/L				-			
1,2,3,4,7,8,9-HpCDF	ND	0.00005	ug/L				-			
1,2,3,4,7,8-HxCDD	ND	0.00005	ug/L				-			
1,2,3,4,7,8-HxCDF	ND	0.00005	ug/L				-			
1,2,3,6,7,8-HxCDD	ND	0.00005	ug/L				-			
1,2,3,6,7,8-HxCDF	ND	0.00005	ug/L				-			
1,2,3,7,8,9-HxCDD	ND	0.00005	ug/L				-			
1,2,3,7,8,9-HxCDF	ND	0.00005	ug/L				-			
1,2,3,7,8-PeCDD	ND	0.00005	ug/L				-			
1,2,3,7,8-PeCDF	ND	0.00005	ug/L				-			
2,3,4,6,7,8-HxCDF	ND	0.00005	ug/L				-			
2,3,4,7,8-PeCDF	ND	0.00005	ug/L				-			
2,3,7,8-TCDD	ND	0.00001	ug/L				-			
2,3,7,8-TCDF	ND	0.00001	ug/L				-			
OCDD	4.8e-006	0.0001	ug/L				-			J
OCDF	1.2e-006	0.0001	ug/L				-			J, Q
Total HpCDD	2.5e-006	0.00005	ug/L				-			J, Q
Total HpCDF	ND	0.00005	ug/L				-			
Total HxCDD	ND	0.00005	ug/L				-			
Total HxCDF	ND	0.00005	ug/L				-			
Total PeCDD	ND	0.00005	ug/L				-			
Total PeCDF	ND	0.00005	ug/L				-			
Total TCDD	ND	0.00001	ug/L				-			
Total TCDF	ND	0.00001	ug/L				-			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.0018		ug/L	0.002		91	23-140			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.0016		ug/L	0.002		81	28-143			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.0017		ug/L	0.002		86	26-138			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.0016		ug/L	0.002		82	32-141			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.0015		ug/L	0.002		77	26-152			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.0018		ug/L	0.002		92	28-130			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.0016		ug/L	0.002		81	26-123			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.0016		ug/L	0.002		80	29-147			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.0021		ug/L	0.002		103	25-181			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.0021		ug/L	0.002		103	24-185			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.0016		ug/L	0.002		81	28-136			

TestAmerica Irvine

Debby Wilson
 Project Manager

MWH-Pasadena/Boeing
 618 Michillinda Avenue, Suite 200
 Arcadia, CA 91007
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 019

Report Number: IUA0604

Sampled: 01/06/11-01/07/11
 Received: 01/06/11

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1011239 Extracted: 01/11/11										
Blank Analyzed: 01/13/2011 (G1A110000239B)					Source:					
Surrogate: 13C-2,3,4,7,8-PeCDF	0.002		ug/L	0.002		99	21-178			
Surrogate: 13C-2,3,7,8-TCDD	0.0018		ug/L	0.002		91	25-164			
Surrogate: 13C-2,3,7,8-TCDF	0.0017		ug/L	0.002		83	24-169			
Surrogate: 13C-OCDD	0.0034		ug/L	0.004		84	17-157			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.00078		ug/L	0.0008		98	35-197			
LCS Analyzed: 01/13/2011 (G1A110000239C)					Source:					
1,2,3,4,6,7,8-HpCDD	0.000908	0.00005	ug/L	0.001		91	70-140			Ba
1,2,3,4,6,7,8-HpCDF	0.000999	0.00005	ug/L	0.001		100	82-122			
1,2,3,4,7,8,9-HpCDF	0.000996	0.00005	ug/L	0.001		100	78-138			
1,2,3,4,7,8-HxCDD	0.000983	0.00005	ug/L	0.001		98	70-164			
1,2,3,4,7,8-HxCDF	0.000904	0.00005	ug/L	0.001		90	72-134			
1,2,3,6,7,8-HxCDD	0.000855	0.00005	ug/L	0.001		85	76-134			
1,2,3,6,7,8-HxCDF	0.000899	0.00005	ug/L	0.001		90	84-130			
1,2,3,7,8,9-HxCDD	0.000916	0.00005	ug/L	0.001		92	64-162			
1,2,3,7,8,9-HxCDF	0.000903	0.00005	ug/L	0.001		90	78-130			
1,2,3,7,8-PeCDD	0.000976	0.00005	ug/L	0.001		98	70-142			
1,2,3,7,8-PeCDF	0.000857	0.00005	ug/L	0.001		86	80-134			
2,3,4,6,7,8-HxCDF	0.000909	0.00005	ug/L	0.001		91	70-156			
2,3,4,7,8-PeCDF	0.000868	0.00005	ug/L	0.001		87	68-160			
2,3,7,8-TCDD	0.000185	0.00001	ug/L	0.0002		92	67-158			
2,3,7,8-TCDF	0.000167	0.00001	ug/L	0.0002		84	75-158			
OCDD	0.00167	0.0001	ug/L	0.002		84	78-144			Ba
OCDF	0.00159	0.0001	ug/L	0.002		80	63-170			Ba
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.0019		ug/L	0.002		95	26-166			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.0017		ug/L	0.002		85	21-158			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.0018		ug/L	0.002		90	20-186			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.00179		ug/L	0.002		89	21-193			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.00164		ug/L	0.002		82	19-202			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.00201		ug/L	0.002		100	25-163			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.00172		ug/L	0.002		86	21-159			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.00164		ug/L	0.002		82	17-205			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.0021		ug/L	0.002		105	21-227			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.00207		ug/L	0.002		104	21-192			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.0017		ug/L	0.002		85	22-176			
Surrogate: 13C-2,3,4,7,8-PeCDF	0.00204		ug/L	0.002		102	13-328			

TestAmerica Irvine

Debby Wilson
 Project Manager

MWH-Pasadena/Boeing
 618 Michillinda Avenue, Suite 200
 Arcadia, CA 91007
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 019

Report Number: IUA0604

Sampled: 01/06/11-01/07/11
 Received: 01/06/11

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1011239 Extracted: 01/11/11										
LCS Analyzed: 01/13/2011 (G1A110000239C)										
Surrogate: 13C-2,3,7,8-TCDD	0.00179		ug/L	0.002		90	20-175			
Surrogate: 13C-2,3,7,8-TCDF	0.00167		ug/L	0.002		83	22-152			
Surrogate: 13C-OCDD	0.00354		ug/L	0.004		89	13-199			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.000811		ug/L	0.0008		101	31-191			

TestAmerica Irvine

Debby Wilson
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from TestAmerica.

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 019

Report Number: IUA0604

Sampled: 01/06/11-01/07/11
Received: 01/06/11

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
IUA0604-01	1664-HEM	Hexane Extractable Material (Oil & Greas	mg/l	0	4.7	15
IUA0604-01	624-Boeing 001/002Q (Fr113+X+Fr1,1-Dichloroethene		ug/l	0	0.50	6
IUA0604-01	624-Boeing 001/002Q (Fr113+X+FrTrichloroethene		ug/l	0	0.50	5
IUA0604-01	Settleable Solids - SM2540F	Total Settleable Solids	ml/l	0	0.10	0.3

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
IUA0604-02	624-Boeing 001/002Q (Fr113+X+Fr1,1-Dichloroethene		ug/l	0	0.50	6
IUA0604-02	624-Boeing 001/002Q (Fr113+X+FrTrichloroethene		ug/l	0	0.50	5

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
IUA0604-03	608-Pest Boeing 001/002 Q (LL)	alpha-BHC	ug/l	0	0.0094	0.03
IUA0604-03	625-Boeing 001/002 Q-LL	2,4,6-Trichlorophenol	ug/l	0	5.66	13
IUA0604-03	625-Boeing 001/002 Q-LL	2,4-Dinitrotoluene	ug/l	0	4.72	18
IUA0604-03	625-Boeing 001/002 Q-LL	Bis(2-ethylhexyl)phthalate	ug/l	0.45	4.72	4
IUA0604-03	625-Boeing 001/002 Q-LL	N-Nitrosodimethylamine	ug/l	0	4.72	16
IUA0604-03	625-Boeing 001/002 Q-LL	Pentachlorophenol	ug/l	0	4.72	16.5
IUA0604-03	Ammonia-N, Titr 4500NH3-C (w/di:Ammonia-N (Distilled)		mg/l	0	0.500	10.1
IUA0604-03	BOD - SM5210B	Biochemical Oxygen Demand	mg/l	0.46	2.0	30
IUA0604-03	Cadmium-200.8	Cadmium	ug/l	0.0030	1.0	3.1
IUA0604-03	Chloride - 300.0	Chloride	mg/l	51	5.0	150
IUA0604-03	Copper-200.8	Copper	ug/l	2.61	2.00	14
IUA0604-03	Cyanide, Total-4500CN-E (5ppb)	Total Cyanide	ug/l	-3	5.0	8.5
IUA0604-03	Lead-200.8	Lead	ug/l	0.095	1.0	5.2
IUA0604-03	MBAS - SM5540C	Surfactants (MBAS)	mg/l	0.020	0.10	0.5
IUA0604-03	Mercury - 245.1	Mercury	ug/l	0	0.20	0.1
IUA0604-03	Nitrate-N, 300.0	Nitrate-N	mg/l	0.069	0.11	8
IUA0604-03	Nitrite-N, 300.0	Nitrite-N	mg/l	0	0.15	1
IUA0604-03	Nitrogen, NO3+NO2 -N EPA 300.0	Nitrate/Nitrite-N	mg/l	0.069	0.26	8
IUA0604-03	Perchlorate 314.0 - Default	Perchlorate	ug/l	0	4.0	6

TestAmerica Irvine

Debby Wilson
Project Manager

MWH-Pasadena/Boeing
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Report Number: IUA0604

Sampled: 01/06/11-01/07/11
 Received: 01/06/11

IUA0604-03	Selenium-200.8	Selenium	ug/l	0.48	2.0	5
IUA0604-03	Sulfate-300.0	Sulfate	mg/l	104	5.0	300
IUA0604-03	TDS - SM2540C	Total Dissolved Solids	mg/l	410	10	950
IUA0604-03	TSS - SM2540D	Total Suspended Solids	mg/l	0	10	45
IUA0604-03	Zinc-200.7	Zinc	ug/l	50	20.0	119

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
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TestAmerica Irvine

Debby Wilson
 Project Manager

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 019

Report Number: IUA0604

Sampled: 01/06/11-01/07/11
Received: 01/06/11

DATA QUALIFIERS AND DEFINITIONS

B	Analyte was detected in the associated Method Blank.
Ba	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J	Estimated result. Result is less than the reporting limit.
Ja	Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
Jb	The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
L	Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was above the acceptance limits. Analyte not detected, data not impacted.
M1	The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
M-3	Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS).
MHA	Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
MNR1	There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
Q	Estimated maximum possible concentration (EMPC).
R	The RPD exceeded the method control limit due to sample matrix effects. The individual analyte QA/QC recoveries, however, were within acceptance limits.
R-7	LCS/LCSD RPD exceeded the acceptance limit. Recovery met acceptance criteria.
U	The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD	Relative Percent Difference

TestAmerica Irvine

Debby Wilson
Project Manager

MWH-Pasadena/Boeing
 618 Michillinda Avenue, Suite 200
 Arcadia, CA 91007
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 019

Report Number: IUA0604

Sampled: 01/06/11-01/07/11
 Received: 01/06/11

Certification Summary

TestAmerica Irvine

Method	Matrix	Nelac	California
EDD + Level 4	Water	N/A	N/A
EPA 120.1	Water	X	X
EPA 1664A	Water	X	X
EPA 180.1	Water	X	X
EPA 200.7-Diss	Water	X	X
EPA 200.7	Water	X	X
EPA 200.8-Diss	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1-Diss	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	X	X
EPA 608	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X
SM 2540D	Water	X	X
SM2340B-Diss	Water		
SM2340B	Water	X	X
SM2540C	Water	X	
SM2540F	Water	X	X
SM4500CN-E	Water	X	X
SM4500NH3-C	Water	X	X
SM5210B	Water	X	X
SM5310B	Water	X	X
SM5540-C	Water	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for TestAmerica may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Subcontracted Laboratories

Aquatic Testing Laboratories-SUB California Cert #1775

4350 Transport Street, Unit 107 - Ventura, CA 93003

Analysis Performed: Bioassay-7 dy Chrnrc
 Samples: IUA0604-03

Analysis Performed: Bioassay-Acute 96hr
 Samples: IUA0604-03

TestAmerica Irvine

Debby Wilson
 Project Manager

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 019

Report Number: IUA0604

Sampled: 01/06/11-01/07/11
Received: 01/06/11

Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: Gamma Spec
Samples: IUA0604-03, IUA0604-04

Analysis Performed: Gross Alpha
Samples: IUA0604-03, IUA0604-04

Analysis Performed: Gross Beta
Samples: IUA0604-03, IUA0604-04

Analysis Performed: Level 4 Data Package
Samples: IUA0604-03, IUA0604-04

Analysis Performed: Radium, Combined
Samples: IUA0604-03, IUA0604-04

Analysis Performed: Strontium 90
Samples: IUA0604-03, IUA0604-04

Analysis Performed: Tritium
Samples: IUA0604-03, IUA0604-04

Analysis Performed: Uranium, Combined
Samples: IUA0604-03, IUA0604-04

TestAmerica Irvine

Debby Wilson
Project Manager

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 019

Report Number: IUA0604

Sampled: 01/06/11-01/07/11
Received: 01/06/11

TestAmerica Buffalo

10 Hazelwood Drive, Suite 106 - Amherst, NY 14228

Method Performed: 8661
Samples: IUA0604-03, IUA0604-04

Method Performed: 900
Samples: IUA0604-03, IUA0604-04

Method Performed: 901.1
Samples: IUA0604-03, IUA0604-04

Method Performed: 903.1
Samples: IUA0604-03, IUA0604-04

Method Performed: 904
Samples: IUA0604-03, IUA0604-04

Method Performed: 905
Samples: IUA0604-03, IUA0604-04

Method Performed: 906
Samples: IUA0604-03

TestAmerica West Sacramento *NELAC Cert #1119CA, Nevada Cert #CA44*

880 Riverside Parkway - West Sacramento, CA 95605

Method Performed: EPA-5 1613B
Samples: IUA0604-03

TestAmerica Irvine

Debby Wilson
Project Manager

IUA 0604

Client Name/Address: MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson						Project: Boeing-SSFL NPDES Quarterly Outfall 019 COMPOSITE <i>Time waited Weighted</i>						ANALYSIS REQUIRED											
Project Manager: Bronwyn Kelly Sampler: <i>RICK BANAGA</i>						Phone Number: (626) 568-6691 Fax Number: (626) 568-6515						Total Recoverable Metals: Cu, Pb, Hg, Cd, Se, Zn, Hardness as CaCO ₃ TCDD (and all congeners) BOD ₅ (20 degrees C) Surfactants (MBAS) Cl ⁻ , SO ₄ , NO ₃ +NO ₂ -N, Perchlorate Nitrate-N, Nitrite-N Turbidity, TDS, TSS Ammonia-N (350.2) Alpha BHC (608) 2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs 625)											
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Total Recoverable Metals: Cu, Pb, Hg, Cd, Se, Zn, Hardness as CaCO ₃	TCDD (and all congeners)	BOD ₅ (20 degrees C)	Surfactants (MBAS)	Cl ⁻ , SO ₄ , NO ₃ +NO ₂ -N, Perchlorate	Nitrate-N, Nitrite-N	Turbidity, TDS, TSS	Ammonia-N (350.2)	Alpha BHC (608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs 625)	Comments						
Outfall 019	W	1L Poly	1	<i>1-7-2011 08:59</i>	HNO ₃	6A	X										<i>18:18 1/7/11 MB</i>						
Outfall 019 Dup	W	1L Poly	1		HNO ₃	6B	X																
Outfall 019	W	1L Amber	2		None	7A, 7B		X															
Outfall 019	W	1L Poly	1		None	8			X														
Outfall 019	W	500 mL Poly	2		None	9A, 9B				X													
Outfall 019	W	500 mL Poly	2		None	10A, 10B					X												
Outfall 019	W	500 mL Poly	1		None	11						X											
Outfall 019	W	500 mL Poly	2		None	12A, 12B							X										
Outfall 019	W	500 mL Poly	1		H ₂ SO ₄	13								X									
Outfall 019	W	1L Amber	2		None	14A, 14B									X								
Outfall 019	W	1L Amber	2	<i>1-7-2011 08:59</i>	None	15A, 15B										X							

COC Page 2 of 3 and Page 3 of 3 are the composite samples for Outfall 019 for this storm event.

These must be added to the same work order for COC Page 1 of 3 for Outfall 019 for the same event.

Relinquished By: <i>Rick Banaga</i> Date/Time: <i>1-7-2011 11:25</i>	Received By: <i>Manuel</i> Date/Time: <i>1-7-11 11:25</i>	Turn-around time: (Check) 24 Hour: _____ 72 Hour: _____ 10 Day: _____ 48 Hour: _____ 5 Day: _____ Normal: <input checked="" type="checkbox"/>
Relinquished By: <i>Manuel</i> Date/Time: <i>1-7-11 16:40</i>	Received By: _____ Date/Time: _____	Sample Integrity: (Check) Intact: <input checked="" type="checkbox"/> On Ice: <input checked="" type="checkbox"/>
Relinquished By: _____ Date/Time: _____	Received By: <i>[Signature]</i> Date/Time: <i>1/7/11 1440</i>	Data Requirements: (Check) No Level IV: _____ All Level IV: _____ NPDES Level IV: <input checked="" type="checkbox"/>

07M01 2.3



EBERLINE

SERVICES

EBERLINE ANALYTICAL CORPORATION
2030 Wright Avenue
Richmond, California 94804-3849
Phone (510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

February 7, 2011

Ms. Debby Wilson
Test America Irvine
17461 Derian Ave., Ste. 100
Irvine, CA 92614

**Reference: Test America-Irvine IUA0604
Eberline Analytical Report S101095-8661
Sample Delivery Group 8661**

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for two water samples received under Test America Job No. IUA0604. The samples were received on January 11, 2011.

Please call me, if you have any questions concerning the enclosed report.

Sincerely,

N. Joseph Verville
Client Services Manager

RM/ljb

Enclosure: Level IV CLP-like Data Package CD

1.0 General Comments

Sample delivery group 8661 consists of the analytical results and supporting documentation for two water samples. Sample ID's and reference dates/times are given in the Sample Summary section of the Summary Data report. The sample was received as stated on the chain-of-custody document. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. No holding times were exceeded.

Tritium and gamma analyses were performed on the sample as received i.e. the sample was not filtered. The analytical volumes for all other analyses were subjected to a full nitric acid/hydrofluoric acid dissolution, and analyses were performed on the dissolution volume.

2.0 Quality Control

Quality Control Samples consisted of laboratory control samples (LCS), method blanks, duplicate analyses and matrix spike analyses. Included in the data package are copies of the Eberline Analytical radiometrics data sheets. The radiometrics data sheets for the QC LCS and QC blank samples indicate Eberline Analytical's standard QC aliquot of 1.0 sample; results for those QC types are calculated as pCi/sample. The QC LCS and QC blank sample results reported in the Summary Data Section have been divided by the appropriate method specific aliquot (see the Lab Method Summaries for specific aliquots) in order to make the results comparable to the field sample results. All QC sample results were within required control limits.

3.0 Method Errors

The error for each result is an estimate of the significant random uncertainties incurred in the measurement process. These are propagated to each final result. They include the counting (Poisson) uncertainty, as well as those intrinsic errors due to carrier or tracer standardization, aliquoting, counter efficiencies, weights, or volumes. The following method errors were propagated to the count error to calculate the 2σ error (Total):

Analysis	Method Error
Gross alpha	20.6%
Gross beta	11.0%
Tritium	10.0%
Sr-90	10.4%
Ra-226	16.4%
Ra-228	10.4%
Uranium, Total	
Gamma Spec.	7.0%

4.0 Analysis Notes

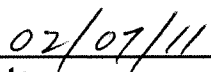
- 4.1 **Gross Alpha/Gross Beta Analysis** – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.2 **Tritium Analysis** – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.3 **Strontium-90 Analysis** - The Sr-90 MDA for sample IUA0604-04 (2.26 pCi/L) was greater than the required detection limit of 2.00 pCi/L. No other problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.4 **Radium-226 Analysis** - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.5 **Radium-228 Analysis** - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.6 **Total Uranium Analysis** - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.7 **Gamma Spectroscopy** – The K-40 MDA for QC Method Blank (41.2 pCi/L) was greater than the required detection limit of 25 pCi/L. No other problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

5.0 Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."



N. Joseph Verville
Client Services Manager



Date

EBERLINE ANALYTICAL
SDG 8661

SDG 8661
Contact N. Joseph Verville

Client Test America, Inc.
Contract IUA0604

S U M M A R Y D A T A S E C T I O N

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WB

Prepared by

R. Melquist

Reviewed by

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-TOC
Version 3.06
Report date 02/07/11

EBERLINE ANALYTICAL

SDG 8661

SDG 8661

Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.

Contract IUA0604

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DUPLICATES

REPORT GUIDES

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SUMMARY DATA SECTION

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EBERLINE ANALYTICAL

SDG 8661

SDG 8661
Contact N. Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract IUA0604

ABOUT THE DATA SUMMARY SECTION

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

REPORT GUIDES

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EBERLINE ANALYTICAL

SDG 8661

SDG 8661
 Contact N. Joseph Verville

LAB SAMPLE SUMMARY

Client Test America, Inc.
 Contract IUA0604

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF CUSTODY	COLLECTED
S101095-01	IUA0604-03	Boeing - SSFL	WATER			IUA0604	01/07/11 08:59
S101095-02	IUA0604-04 (TRIP BLANK)	Boeing - SSFL	WATER			IUA0604	01/07/11 18:25
S101095-03	Lab Control Sample		WATER				
S101095-04	Method Blank		WATER				
S101095-05	Duplicate (S101095-01)	Boeing - SSFL	WATER				01/07/11 08:59

LAB SUMMARY

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EBERLINE ANALYTICAL

SDG 8661

SDG 8661
 Contact N. Joseph Verville

QC SUMMARY

Client Test America, Inc.
 Contract IUA0604

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% MOIST	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
8661	IUA0604	IUA0604-03	WATER		10.0 L		01/11/11	4	S101095-01	8661-001
		IUA0604-04 (TRIP BLANK)	WATER		10.0 L		01/11/11	4	S101095-02	8661-002
		Method Blank	WATER						S101095-04	8661-004
		Lab Control Sample	WATER						S101095-03	8661-003
		Duplicate (S101095-01)	WATER		10.0 L		01/11/11	4	S101095-05	8661-005

QC SUMMARY

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Lab id EAS
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 Report date 02/07/11

EBERLINE ANALYTICAL

SDG 8661

SDG 8661
 Contact N. Joseph Verville

PREP BATCH SUMMARY

Client Test America, Inc.
 Contract IUA0604

TEST	MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED			QUALIFIERS	
			BATCH	2σ %	CLIENT	MORE	RE BLANK		LCS
Beta Counting									
AC	WATER	Radium-228 in Water	7271-043	10.4	2		1	1	1/1
SR	WATER	Strontium-90 in Water	7271-043	10.4	2		1	1	1/1
Gas Proportional Counting									
80A	WATER	Gross Alpha in Water	7271-043	20.6	2		1	1	1/1
80B	WATER	Gross Beta in Water	7271-043	11.0	2		1	1	1/1
Gamma Spectroscopy									
GAM	WATER	Gamma Emitters in Water	7271-043	7.0	2		1	1	1/1
Kinetic Phosphorimetry, ug									
U_T	WATER	Uranium, Total	7271-043		2		1	1	1/1
Liquid Scintillation Counting									
H	WATER	Tritium in Water	7271-043	10.0	1		1	1	1/1
Radon Counting									
RA	WATER	Radium-226 in Water	7271-043	16.4	2		1	1	1/1

Blank, LCS, Duplicate and Spike planchets are those in the same preparation batch as some Client sample.

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SDG 8661

SDG 8661
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Client Test America, Inc.
 Contract IUA0604

LAB WORK SUMMARY

LAB SAMPLE	CLIENT SAMPLE ID				SUF-					
COLLECTED	LOCATION	MATRIX			FIX	ANALYZED	REVIEWED	BY	METHOD	
RECEIVED	CUSTODY	SAS no	PLANCHET	TEST						
S101095-01	IUA0604-03		8661-001	80A/80		01/19/11	01/24/11	BW	Gross Alpha in Water	
01/07/11	Boeing - SSFL	WATER	8661-001	80B/80		01/19/11	01/24/11	BW	Gross Beta in Water	
01/11/11	IUA0604		8661-001	AC		01/27/11	01/28/11	BW	Radium-228 in Water	
			8661-001	GAM		01/17/11	01/20/11	MWT	Gamma Emitters in Water	
			8661-001	H		01/27/11	02/03/11	BW	Tritium in Water	
			8661-001	RA		01/27/11	01/28/11	BW	Radium-226 in Water	
			8661-001	SR		01/26/11	01/31/11	BW	Strontium-90 in Water	
			8661-001	U_T		02/01/11	02/03/11	BW	Uranium, Total	
S101095-02	IUA0604-04 (TRIP BLANK)		8661-002	80A/80		01/21/11	01/24/11	BW	Gross Alpha in Water	
01/07/11	Boeing - SSFL	WATER	8661-002	80B/80		01/21/11	01/24/11	BW	Gross Beta in Water	
01/11/11	IUA0604		8661-002	AC		01/27/11	01/28/11	BW	Radium-228 in Water	
			8661-002	GAM		01/20/11	01/20/11	MWT	Gamma Emitters in Water	
			8661-002	RA		01/27/11	01/28/11	BW	Radium-226 in Water	
			8661-002	SR		01/26/11	01/31/11	BW	Strontium-90 in Water	
			8661-002	U_T		02/01/11	02/03/11	BW	Uranium, Total	
S101095-03	Lab Control Sample		8661-003	80A/80		01/19/11	01/24/11	BW	Gross Alpha in Water	
		WATER	8661-003	80B/80		01/19/11	01/24/11	BW	Gross Beta in Water	
			8661-003	AC		01/27/11	01/28/11	BW	Radium-228 in Water	
			8661-003	GAM		01/17/11	01/20/11	MWT	Gamma Emitters in Water	
			8661-003	H		01/27/11	02/03/11	BW	Tritium in Water	
			8661-003	RA		01/27/11	01/28/11	BW	Radium-226 in Water	
			8661-003	SR		01/26/11	01/31/11	BW	Strontium-90 in Water	
			8661-003	U_T		02/01/11	02/03/11	BW	Uranium, Total	
S101095-04	Method Blank		8661-004	80A/80		01/19/11	01/24/11	BW	Gross Alpha in Water	
		WATER	8661-004	80B/80		01/19/11	01/24/11	BW	Gross Beta in Water	
			8661-004	AC		01/27/11	01/28/11	BW	Radium-228 in Water	
			8661-004	GAM		01/17/11	01/20/11	MWT	Gamma Emitters in Water	
			8661-004	H		01/27/11	02/03/11	BW	Tritium in Water	
			8661-004	RA		01/27/11	01/28/11	BW	Radium-226 in Water	
			8661-004	SR		01/26/11	01/31/11	BW	Strontium-90 in Water	
			8661-004	U_T		02/01/11	02/03/11	BW	Uranium, Total	

WORK SUMMARY

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EBERLINE ANALYTICAL

SDG 8661

WORK SUMMARY, cont.

SDG 8661
Contact N. Joseph Verville

Client Test America, Inc.
Contract IUA0604

LAB SAMPLE	CLIENT SAMPLE ID				SUF-					
COLLECTED	LOCATION	MATRIX			FIX	ANALYZED	REVIEWED	BY	METHOD	
RECEIVED	CUSTODY	SAS no	PLANCHET	TEST						
S101095-05	Duplicate (S101095-01)		8661-005	80A/80		01/19/11	01/24/11	BW	Gross Alpha in Water	
01/07/11	Boeing - SSFL	WATER	8661-005	80B/80		01/19/11	01/24/11	BW	Gross Beta in Water	
01/11/11			8661-005	AC		01/27/11	01/28/11	BW	Radium-228 in Water	
			8661-005	GAM		01/18/11	01/20/11	MWT	Gamma Emitters in Water	
			8661-005	H		01/27/11	02/03/11	BW	Tritium in Water	
			8661-005	RA		01/27/11	01/28/11	BW	Radium-226 in Water	
			8661-005	SR		01/26/11	01/31/11	BW	Strontium-90 in Water	
			8661-005	U_T		02/01/11	02/03/11	BW	Uranium, Total	

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAS no	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP	SPIKE	TOTAL
80A/80		Gross Alpha in Water	900.0	2			1	1	1		5
80B/80		Gross Beta in Water	900.0	2			1	1	1		5
AC		Radium-228 in Water	904.0	2			1	1	1		5
GAM		Gamma Emitters in Water	901.1	2			1	1	1		5
H		Tritium in Water	906.0	1			1	1	1		4
RA		Radium-226 in Water	903.1	2			1	1	1		5
SR		Strontium-90 in Water	905.0	2			1	1	1		5
U_T		Uranium, Total	D5174	2			1	1	1		5
TOTALS				15			8	8	8		39

WORK SUMMARY

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Lab id EAS
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EBERLINE ANALYTICAL
SDG 8661

8661-004

Method Blank

METHOD BLANK

SDG <u>8661</u> Contact <u>N. Joseph Verville</u>	Client <u>Test America, Inc.</u> Contract <u>IUA0604</u>
Lab sample id <u>S101095-04</u> Dept sample id <u>8661-004</u>	Client sample id <u>Method Blank</u> Material/Matrix _____ <u>WATER</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	0.096	0.21	0.448	3.00	U	80A
Gross Beta	12587472	-0.020	0.56	0.952	4.00	U	80B
Tritium	10028178	-130	160	293	500	U	H
Radium-226	13982633	-0.097	0.26	0.518	1.00	U	RA
Radium-228	15262201	-0.023	0.34	0.392	1.00	U	AC
Strontium-90	10098972	-0.233	0.54	1.39	2.00	U	SR
Uranium, Total		0	0.007	0.016	1.00	U	U_T
Potassium-40	13966002	U		<u>41.2</u>	25.0	U	GAM
Cesium-137	10045973	U		2.06	20.0	U	GAM

QC-BLANK #76836

Lab id <u>EAS</u>
Protocol <u>TA</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>02/07/11</u>

EBERLINE ANALYTICAL

SDG 8661

8661-003

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>8661</u> Contact <u>N. Joseph Verville</u>	Client <u>Test America, Inc.</u> Contract <u>IUA0604</u>
Lab sample id <u>S101095-03</u> Dept sample id <u>8661-003</u>	Client sample id <u>Lab Control Sample</u> Material/Matrix <u>WATER</u>

ANALYTE	RESULT	2σ ERR	MDA	RDL	QUALI-	ADDED	2σ ERR	REC	2σ LMTS	PROTOCOL
	pCi/L	(COUNT)	pCi/L	pCi/L	FIERS TEST		pCi/L	%	(TOTAL)	LIMITS
Gross Alpha	46.6	2.6	0.674	3.00	80A	40.4	1.6	115	75-125	70-130
Gross Beta	34.0	1.5	1.24	4.00	80B	35.0	1.4	97	88-112	70-130
Tritium	2410	270	290	500	H	2540	100	95	85-115	80-120
Radium-226	59.1	2.4	0.606	1.00	RA	55.7	2.2	106	82-118	80-120
Radium-228	4.91	0.28	0.322	1.00	AC	4.62	0.18	106	87-113	60-140
Strontium-90	18.0	2.2	1.46	2.00	SR	17.5	0.70	103	83-117	80-120
Uranium, Total	57.7	6.5	0.160	1.00	U_T	56.5	2.3	102	88-112	80-120
Cobalt-60	127	4.2	2.02	10.0	GAM	128	5.1	99	91-109	80-120
Cesium-137	109	3.6	2.52	20.0	GAM	110	4.4	99	91-109	80-120

QC-LCS #76835

Lab id <u>EAS</u>
Protocol <u>TA</u>
Version <u>Ver 1.0</u>
Form <u>DVD-LCS</u>
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EBERLINE ANALYTICAL

SDG 8661

8661-005

IUA0604-03

DUPLICATE

SDG <u>8661</u> Contact <u>N. Joseph Verville</u> DUPLICATE Lab sample id <u>S101095-05</u> Dept sample id <u>8661-005</u>	ORIGINAL Lab sample id <u>S101095-01</u> Dept sample id <u>8661-001</u> Received <u>01/11/11</u>	Client <u>Test America, Inc.</u> Contract <u>IUA0604</u> Client sample id <u>IUA0604-03</u> Location/Matrix <u>Boeing - SSFL</u> <u>WATER</u> Collected/Volume <u>01/07/11 08:59</u> <u>10.0 L</u> Chain of custody id <u>IUA0604</u>
--	---	--

ANALYTE	DUPLICATE		MDA		RDL		QUALI- FIERS	TEST	ORIGINAL		MDA		QUALI- FIERS	RPD %	3σ TOT	DER σ
	pCi/L	2σ ERR (COUNT)	pCi/L		pCi/L				pCi/L	2σ ERR (COUNT)	pCi/L					
Gross Alpha	0.394	0.33	0.461		3.00		U	80A	0.496	0.69	1.13		U	-		0.3
Gross Beta	0.358	0.98	1.61		4.00		U	80B	0.161	1.1	1.75		U	-		0.3
Tritium	-70.7	170	298		500		U	H	-18.9	170	298		U	-		0.4
Radium-226	0.547	0.35	0.515		1.00		J	RA	0.448	0.33	0.512		U	20	149	0.4
Radium-228	0.200	0.34	0.360		1.00		U	AC	0.170	0.16	0.339		U	-		0.2
Strontium-90	-0.159	0.48	1.18		2.00		U	SR	0.051	0.78	1.79		U	-		0.5
Uranium, Total	0.067	0.010	0.016		1.00		J	U_T	0.065	0.010	0.016		J	3	32	0.3
Potassium-40	U		22.3		25.0		U	GAM	U		22.6		U	-		0
Cesium-137	U		1.40		20.0		U	GAM	U		1.10		U	-		0.3

QC-DUP#1 76837

DUPLICATES

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EBERLINE ANALYTICAL
SDG 8661

8661-001

IUA0604-03

DATA SHEET

SDG <u>8661</u>	Client <u>Test America, Inc.</u>
Contact <u>N. Joseph Verville</u>	Contract <u>IUA0604</u>
Lab sample id <u>S101095-01</u>	Client sample id <u>IUA0604-03</u>
Dept sample id <u>8661-001</u>	Location/Matrix <u>Boeing - SSFL</u> <u>WATER</u>
Received <u>01/11/11</u>	Collected/Volume <u>01/07/11 08:59</u> <u>10.0 L</u>
	Chain of custody id <u>IUA0604</u>

ANALYTE	CAS NO	RESULT pCi/L	2 σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	0.496	0.69	1.13	3.00	U	80A
Gross Beta	12587472	0.161	1.1	1.75	4.00	U	80B
Tritium	10028178	-18.9	170	298	500	U	H
Radium-226	13982633	0.448	0.33	0.512	1.00	U	RA
Radium-228	15262201	0.170	0.16	0.339	1.00	U	AC
Strontium-90	10098972	0.051	0.78	1.79	2.00	U	SR
Uranium, Total		0.065	0.010	0.016	1.00	J	U_T
Potassium-40	13966002	U		22.6	25.0	U	GAM
Cesium-137	10045973	U		1.10	20.0	U	GAM

Lab id <u>EAS</u>
Protocol <u>TA</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>02/07/11</u>

DATA SHEETS

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EBERLINE ANALYTICAL

SDG 8661

8661-002

IUA0604-04 (TRIP BLANK)

DATA SHEET

SDG <u>8661</u>	Client <u>Test America, Inc.</u>
Contact <u>N. Joseph Verville</u>	Contract <u>IUA0604</u>
Lab sample id <u>S101095-02</u>	Client sample id <u>IUA0604-04 (TRIP BLANK)</u>
Dept sample id <u>8661-002</u>	Location/Matrix <u>Boeing - SSFL</u> <u>WATER</u>
Received <u>01/11/11</u>	Collected/Volume <u>01/07/11 18:25</u> <u>10.0 L</u>
	Chain of custody id <u>IUA0604</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	-0.068	0.16	0.310	3.00	U	80A
Gross Beta	12587472	-0.371	0.76	1.25	4.00	U	80B
Radium-226	13982633	0.056	0.32	0.581	1.00	U	RA
Radium-228	15262201	0.072	0.30	0.328	1.00	U	AC
Strontium-90	10098972	-0.300	0.89	<u>2.26</u>	2.00	U	SR
Uranium, Total		0	0.007	0.016	1.00	U	U_T
Potassium-40	13966002	U		19.7	25.0	U	GAM
Cesium-137	10045973	U		1.40	20.0	U	GAM

Lab id <u>EAS</u>
Protocol <u>TA</u>
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Version <u>3.06</u>
Report date <u>02/07/11</u>

EBERLINE ANALYTICAL

SDG 8661

Test AC Matrix WATER
 SDG 8661
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract IUA0604

LAB METHOD SUMMARY

RADIUM-228 IN WATER
 BETA COUNTING

RESULTS

LAB RAW SUP-
 SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Radium-228

Preparation batch 7271-043

S101095-01	8661-001	IUA0604-03	U
S101095-02	8661-002	IUA0604-04 (TRIP BLANK)	U
S101095-03	8661-003	Lab Control Sample	ok
S101095-04	8661-004	Method Blank	U
S101095-05	8661-005	Duplicate (S101095-01)	- U

Nominal values and limits from method RDLs (pCi/L) 1.00

METHOD PERFORMANCE

LAB RAW SUP- MDA ALIQ PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-
 SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/L L FAC TION % % min keV KeV HELD PREPARED YZED DETECTOR

Preparation batch 7271-043 2σ prep error 10.4 % Reference Lab Notebook No. 7271 pg.043

S101095-01	IUA0604-03	0.339	1.80	76	150	20	01/27/11	01/27	GRB-221
S101095-02	IUA0604-04 (TRIP BLANK)	0.328	1.80	73	150	20	01/27/11	01/27	GRB-222
S101095-03	Lab Control Sample	0.322	1.80	77	150		01/27/11	01/27	GRB-223
S101095-04	Method Blank	0.392	1.80	75	150		01/27/11	01/27	GRB-224
S101095-05	Duplicate (S101095-01)	0.360	1.80	74	150	20	01/27/11	01/27	GRB-225

Nominal values and limits from method 1.00 1.80 30-105 50 180

PROCEDURES REFERENCE 904.0
 DWP-894 Sequential Separation of Actinium-228 and Radium-226 in Drinking Water (>1 Liter Aliquot), rev 5

AVERAGES ± 2 SD MDA 0.348 ± 0.057
 FOR 5 SAMPLES YIELD 75 ± 3

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
 Report date 02/07/11

EBERLINE ANALYTICAL

SDG 8661

Test SR Matrix WATER
 SDG 8661
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract IUA0604

LAB METHOD SUMMARY

STRONTIUM-90 IN WATER
 BETA COUNTING

RESULTS

LAB	RAW	SUF-		
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Strontium-90
Preparation batch 7271-043				
S101095-01		8661-001	IUA0604-03	U
S101095-02		8661-002	IUA0604-04 (TRIP BLANK)	U
S101095-03		8661-003	Lab Control Sample	ok
S101095-04		8661-004	Method Blank	U
S101095-05		8661-005	Duplicate (S101095-01)	- U

Nominal values and limits from method RDLs (pCi/L) 2.00

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-	
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	%	%	min	keV	KeV	HELD PREPARED	YZED	DETECTOR
Preparation batch 7271-043 2σ prep error 10.4 % Reference Lab Notebook No. 7271 pg.043														
S101095-01		IUA0604-03	1.79	0.500			53		50			19	01/19/11	01/26 GRB-231
S101095-02		IUA0604-04 (TRIP BLANK)	<u>2.26</u>	0.500			39		50			19	01/19/11	01/26 GRB-232
S101095-03		Lab Control Sample	1.46	0.500			44		50				01/19/11	01/26 GRB-223
S101095-04		Method Blank	1.39	0.500			63		50				01/19/11	01/26 GRB-230
S101095-05		Duplicate (S101095-01)	1.18	0.500			80		50			19	01/19/11	01/26 GRB-231

Nominal values and limits from method 2.00 0.500 30-105 50 180

PROCEDURES REFERENCE 905.0
 DWP-380 Strontium in Drinking Water, rev 8

AVERAGES ± 2 SD MDA 1.62 ± 0.843
 FOR 5 SAMPLES YIELD 56 ± 33

METHOD SUMMARIES

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Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
 Report date 02/07/11

EBERLINE ANALYTICAL

SDG 8661

Test 80A Matrix WATER

SDG 8661

Contact N. Joseph Verville

Client Test America, Inc.

Contract IUA0604

LAB METHOD SUMMARY

GROSS ALPHA IN WATER

GAS PROPORTIONAL COUNTING

RESULTS

LAB	RAW	SUF-			
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID		Gross Alpha
Preparation batch 7271-043					
S101095-01	80	8661-001	IUA0604-03		U
S101095-02	80	8661-002	IUA0604-04 (TRIP BLANK)		U
S101095-03	80	8661-003	Lab Control Sample		ok
S101095-04	80	8661-004	Method Blank		U
S101095-05	80	8661-005	Duplicate (S101095-01)	-	U

Nominal values and limits from method RDLs (pCi/L) 3.00

METHOD PERFORMANCE

LAB	RAW	SUF-		MDA	ALIQ	PREP	DILU-	RESID	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID		pCi/L	L	FAC	TION	mg	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7271-043 2σ prep error 20.6 % Reference Lab Notebook No. 7271 pg.043																
S101095-01	80	IUA0604-03		1.13	<u>0.160</u>			82		400			12	01/19/11	01/19	GRB-101
S101095-02	80	IUA0604-04 (TRIP BLANK)		0.310	0.300			0		400			14	01/20/11	01/21	GRB-107
S101095-03	80	Lab Control Sample		0.674	0.250			64		400				01/19/11	01/19	GRB-103
S101095-04	80	Method Blank		0.448	0.250			66		400				01/19/11	01/19	GRB-104
S101095-05	80	Duplicate (S101095-01)		0.461	<u>0.160</u>			0		400			12	01/19/11	01/19	GRB-105

Nominal values and limits from method 3.00 0.250 0-200 100 180

PROCEDURES REFERENCE 900.0
 DWP-121 Gross Alpha and Gross Beta in Drinking Water,
 rev 10

AVERAGES ± 2 SD MDA 0.605 ± 0.642
 FOR 5 SAMPLES RESIDUE 42 ± 79

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
 Report date 02/07/11

EBERLINE ANALYTICAL

SDG 8661

Test 80B Matrix WATER
 SDG 8661
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract IUA0604

LAB METHOD SUMMARY

GROSS BETA IN WATER
 GAS PROPORTIONAL COUNTING

RESULTS

LAB	RAW	SUF-			
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID		Gross Beta
Preparation batch 7271-043					
S101095-01	80	8661-001	IUA0604-03		U
S101095-02	80	8661-002	IUA0604-04 (TRIP BLANK)		U
S101095-03	80	8661-003	Lab Control Sample		ok
S101095-04	80	8661-004	Method Blank		U
S101095-05	80	8661-005	Duplicate (S101095-01)		- U

Nominal values and limits from method RDLs (pCi/L) 4.00

METHOD PERFORMANCE

LAB	RAW	SUF-		MDA	ALIQ	PREP	DILU-	RESID	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID		pCi/L	L	FAC	TION	mg	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7271-043 2σ prep error 11.0 % Reference Lab Notebook No. 7271 pg.043																
S101095-01	80	IUA0604-03		1.75	<u>0.160</u>			82		400			12	01/19/11	01/19	GRB-101
S101095-02	80	IUA0604-04 (TRIP BLANK)		1.25	0.300			0		400			14	01/20/11	01/21	GRB-107
S101095-03	80	Lab Control Sample		1.24	0.250			64		400				01/19/11	01/19	GRB-103
S101095-04	80	Method Blank		0.952	0.250			66		400				01/19/11	01/19	GRB-104
S101095-05	80	Duplicate (S101095-01)		1.61	<u>0.160</u>			0		400			12	01/19/11	01/19	GRB-105

Nominal values and limits from method 4.00 0.250 0-200 100 180

PROCEDURES REFERENCE 900.0
 DWP-121 Gross Alpha and Gross Beta in Drinking Water,
 rev 10

AVERAGES ± 2 SD MDA 1.36 ± 0.638
 FOR 5 SAMPLES RESIDUE 42 ± 79

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
 Report date 02/07/11

EBERLINE ANALYTICAL

SDG 8661

Test GAM Matrix WATER
 SDG 8661
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract IUA0604

LAB METHOD SUMMARY

GAMMA EMITTERS IN WATER
 GAMMA SPECTROSCOPY

RESULTS

LAB	RAW	SUF-			
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt-60	Cesium-137
Preparation batch 7271-043					
S101095-01		8661-001	IUA0604-03		U
S101095-02		8661-002	IUA0604-04 (TRIP BLANK)		U
S101095-03		8661-003	Lab Control Sample	ok	ok
S101095-04		8661-004	Method Blank		U
S101095-05		8661-005	Duplicate (S101095-01)		- U

Nominal values and limits from method RDLs (pCi/L) 10.0 20.0

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-		
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7271-043			2σ prep error 7.0 %			Reference Lab Notebook No. 7271 pg.043									
S101095-01		IUA0604-03	2.00						913			10	01/13/11	01/17	01,02,00
S101095-02		IUA0604-04 (TRIP BLANK)	2.00						564			13	01/13/11	01/20	01,04,00
S101095-03		Lab Control Sample	2.00						913				01/13/11	01/17	01,04,00
S101095-04		Method Blank	2.00						913				01/13/11	01/17	MB,05,00
S101095-05		Duplicate (S101095-01)	2.00						427			11	01/13/11	01/18	MB,08,00

Nominal values and limits from method 6.00 2.00 400 180

PROCEDURES REFERENCE 901.1
 DWP-100 Preparation of Drinking Water Samples for Gamma Spectroscopy, rev 5

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
 Report date 02/07/11

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SDG 8661

Test U T Matrix WATER
 SDG 8661
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract IUA0604

LAB METHOD SUMMARY

URANIUM, TOTAL
 KINETIC PHOSPHORIMETRY, UG

RESULTS

LAB	RAW	SUF-		Uranium,
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Total
Preparation batch 7271-043				
S101095-01		8661-001	IUA0604-03	0.065 J
S101095-02		8661-002	IUA0604-04 (TRIP BLANK)	U
S101095-03		8661-003	Lab Control Sample	ok
S101095-04		8661-004	Method Blank	U
S101095-05		8661-005	Duplicate (S101095-01)	ok J

Nominal values and limits from method RDLs (pCi/L) 1.00

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-		
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7271-043			2σ prep error		Reference Lab Notebook No. 7271 pg.043										
S101095-01		IUA0604-03	0.016	0.0200								25	02/01/11	02/01	KPA-001
S101095-02		IUA0604-04 (TRIP BLANK)	0.016	0.0200								25	02/01/11	02/01	KPA-001
S101095-03		Lab Control Sample	0.160	0.0200									02/01/11	02/01	KPA-001
S101095-04		Method Blank	0.016	0.0200									02/01/11	02/01	KPA-001
S101095-05		Duplicate (S101095-01)	0.016	0.0200								25	02/01/11	02/01	KPA-001

Nominal values and limits from method 1.00 0.0200 180

PROCEDURES REFERENCE D5174

AVERAGES ± 2 SD MDA 0.045 ± 0.129
 FOR 5 SAMPLES YIELD _____ ± _____

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
 Report date 02/07/11

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SDG 8661

LAB METHOD SUMMARY

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Test H Matrix WATER
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 Contract IUA0604

RESULTS

LAB RAW SUF-
 SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Tritium

Preparation batch 7271-043

S101095-01		8661-001	IUA0604-03	U
S101095-03		8661-003	Lab Control Sample	ok
S101095-04		8661-004	Method Blank	U
S101095-05		8661-005	Duplicate (S101095-01)	- U

Nominal values and limits from method RDLs (pCi/L) 500

METHOD PERFORMANCE

LAB RAW SUF- MDA ALIQ PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-
 SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/L L FAC TION % % min keV KeV HELD PREPARED YZED DETECTOR

Preparation batch 7271-043 2σ prep error 10.0 % Reference Lab Notebook No. 7271 pg.043

S101095-01		IUA0604-03	298	0.0100	100	50	20	01/27/11	01/27	LSC-004
S101095-03		Lab Control Sample	290	0.100	10	50		01/27/11	01/27	LSC-004
S101095-04		Method Blank	293	0.100	10	50		01/27/11	01/27	LSC-004
S101095-05		Duplicate (S101095-01)	298	0.0100	100	50	20	01/27/11	01/27	LSC-004

Nominal values and limits from method 500 0.0100 100 180

PROCEDURES REFERENCE 906.0
 DWP-212 Tritium in Drinking Water by Distillation, rev 8

AVERAGES ± 2 SD MDA 295 ± 7.90
 FOR 4 SAMPLES YIELD 55 ± 104

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
 Report date 02/07/11

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REPORT GUIDE

Client Test America, Inc.
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SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

- * LAB SAMPLE ID is the lab's primary identification for a sample.
- * DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.
- * CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.
- * QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

- * All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

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PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

- * The preparation batches are shown in the same order as the Method Summary Reports are printed.
- * Only analyses of planchets relevant to the SDG are included.
- * Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.
- * The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

These qualifiers should be reviewed as follows:

- X Some data has been manually entered or modified. Transcription errors are possible.
- P One or more results are 'preliminary'. The data is not ready for final reporting.
- 2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

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WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

- * TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.
- * SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.
- * The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.
- * PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.
- * For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.
- * The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

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DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

- * TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.
- * The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

- * ERRORS can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.
- * A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.
- * When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

- U The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.

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DATA SHEET

- J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
- B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.
- Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.
- For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.
- L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.
- H Similar to 'L' except the recovery was high.
- P The RESULT is 'preliminary'.
- X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
- 2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.
- Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

- * An MDA is underlined if it is bigger than its RDL.
- * An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA

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DATA SHEET

may not be a good estimate of the 'real' minimum detectable activity.

- * A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.
- * When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

REPORT GUIDES

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REPORT GUIDE

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LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.
- * An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- * The first, computed limits for the recovery reflect:
 1. The error of RESULT, including that introduced by rounding the result prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
 2. The error of ADDED.
 3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- * The second limits are protocol defined upper and lower QC limits for the recovery.
- * The recovery is underlined if it is outside either of these ranges.

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DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTS divided by their average expressed as a percent.

If both RESULTS are less than their MDAs, no RPD is computed and a '-' is printed.

For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

- * The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTS prior to printing.

If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not.

This value reported for this limit is at most 999.

- * The second limit for the RPD is the larger of:
 1. A fixed percentage specified in the protocol.

REPORT GUIDES

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Version 3.06
Report date 02/07/11

EBERLINE ANALYTICAL

SDG 8661

SDG 8661
Contact N. Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract IUA0604

DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

- * The RPD is underlined if it is greater than either limit.
- * If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

- * The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

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REPORT GUIDE

Client Test America, Inc.
Contract IUA0604

MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

- * The first, computed limits for the recovery reflect:

1. The errors of the two RESULTS, including those introduced by rounding them prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

2. The error of ADDED.

3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

- * The second limits are protocol defined upper and lower QC limits for the recovery.

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GUIDE, cont.

MATRIX SPIKE

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

- * The recovery is underlined (out of spec) if it is outside either of these ranges.

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REPORT GUIDE

METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

- * Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

- * The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

- * If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

The J and X flags are as on the data sheet.

- * Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.

- * Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data' means no amount ADDED was specified. 'LOW' and 'HIGH'

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GUIDE, cont.

Client Test America, Inc.
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METHOD SUMMARY

correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

* Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.

* If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

MDAs are underlined if greater than the printed RDL.

* Aliquots are underlined if less than the nominal value specified for the method.

* Preparation factors are underlined if greater than the nominal value specified for the method.

* Dilution factors are underlined if greater than the nominal value specified for the method.

* Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.

* Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.

* Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

* Count times are underlined if less than the nominal value

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Client Test America, Inc.
Contract IUA0604

GUIDE, cont.

METHOD SUMMARY

specified for the method.

- * Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.
- * Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.
- * Days Held are underlined if greater than the holding time specified in the protocol.
- * Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1+3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included.

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METHOD SUMMARY

No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

REPORT GUIDES

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SUBCONTRACT ORDER
TestAmerica Irvine

IUA0604

8661

SENDING LABORATORY:

TestAmerica Irvine
 17461 Derian Avenue, Suite 100
 Irvine, CA 92614
 Phone: (949) 261-1022
 Fax: (949) 260-3297
 Project Manager: Debby Wilson

RECEIVING LABORATORY:

Eberline Services
 2030 Wright Avenue
 Richmond, CA 94804
 Phone : (510) 235-2633
 Fax: (510) 235-0438
 Project Location: California
 Receipt Temperature: 5.8 °C Ice: Y N

Standard TAT is requested unless specific due date is requested. => Due Date: _____ Initials: _____

Analysis	Units	Expires	Comments
----------	-------	---------	----------

Sample ID: IUA0604-03 (Outfall 019 (Composite) - Water) Sampled: 01/07/11 08:59

Gamma Spec-O	mg/kg	01/07/12 08:59	Out St Louis, k-40 and cs-137 only, DO NOT FILTER!
Gross Alpha-O	pCi/L	07/06/11 08:59	Out St Louis, Boeing permit, DO NOT FILTER!
Gross Beta-O	pCi/L	07/06/11 08:59	Out St Louis, Boeing permit, DO NOT FILTER!
Level 4 Data Package - Out	N/A	02/04/11 08:59	
Radium, Combined-O	pCi/L	01/07/12 08:59	Out St Louis, Boeing permit, DO NOT FILTER!
Strontium 90-O	pCi/L	01/07/12 08:59	Out St Louis, Boeing permit, DO NOT FILTER!
Tritium-O	pCi/L	01/07/12 08:59	Out St Louis, Boeing permit, DO NOT FILTER!
Uranium, Combined-O	pCi/L	01/07/12 08:59	Out St Louis, Boeing permit, DO NOT FILTER!

Containers Supplied:
 2.5 gal Poly (T) HNO₃ 500 mL Amber (U)

Sample ID: IUA0604-04 (Trip Blank - Water) Sampled: 01/07/11 18:25

Gamma Spec-O	mg/kg	01/07/12 18:25	Out St Louis, k-40 and cs-137 only, DO NOT FILTER!
Gross Alpha-O	pCi/L	07/06/11 18:25	Out St Louis, Boeing permit, DO NOT FILTER!
Gross Beta-O	pCi/L	07/06/11 18:25	Out St Louis, Boeing permit, DO NOT FILTER!
Level 4 Data Package - Out	N/A	02/04/11 18:25	
Radium, Combined-O	pCi/L	01/07/12 18:25	Out St Louis, Boeing permit, DO NOT FILTER!
Strontium 90-O	pCi/L	01/07/12 18:25	Out St Louis, Boeing permit, DO NOT FILTER!
Tritium-O	pCi/L	01/07/12 18:25	Out St Louis, Boeing permit, DO NOT FILTER!
Uranium, Combined-O	pCi/L	01/07/12 18:25	Out St Louis, Boeing permit, DO NOT FILTER!

Containers Supplied:
 2.5 gal Poly (A) HNO₃

Released By: [Signature]
 Date/Time: 1/10/11

Released By: Fed EX
 Date/Time: _____

Received By: Fed - EX Date/Time: 1/10/11 1700

Received By: [Signature] Date/Time: 01/11/11 0930



RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: TEST AMERICA City IRVINE State CA
 Date/Time received 01/11/11 09:30 CoC No. 1UA0604
 Container I.D. No. 16 cTEST Requested TAT (Days) STD P.O. Received Yes [] No []

INSPECTION

1. Custody seals on shipping container intact? Yes No [] N/A []
2. Custody seals on shipping container dated & signed? Yes No [] N/A []
3. Custody seals on sample containers intact? Yes [] No [] N/A
4. Custody seals on sample containers dated & signed? Yes [] No [] N/A
5. Packing material is: Wet [] Dry
6. Number of samples in shipping container: 2 Sample Matrix W
7. Number of containers per sample: _____ (Or see CoC)
8. Samples are in correct container Yes No []
9. Paperwork agrees with samples? Yes No []
10. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels
11. Samples are: In good condition Leaking [] Broken Container [] Missing []
12. Samples are: Preserved Not preserved pH <2 / N/A Preservative H2O3
13. Describe any anomalies:

14. Was P.M. notified of any anomalies? Yes [] No [] Date _____
15. Inspected by Muey Date: 01/11/11 Time: 1115

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
<u>All Ship CES</u>	<u><60</u>						

Ion Chamber Ser. No. _____ Calibration date _____
 Alpha Meter Ser. No. _____ Calibration date _____
 Beta/Gamma Meter Ser. No. 100482 Calibration date 24 SEPT 10

LABORATORY REPORT



"dedicated to providing quality aquatic toxicity testing"

4350 Transport Street, Unit 107
Ventura, CA 93003
(805) 650-0546 FAX (805) 650-0756
CA DOHS ELAP Cert. No.: 1775

Date: January 14, 2011
Client: TestAmerica, Irvine
17461 Derian Ave., Suite 100
Irvine, CA 92614
Attn: Debby Wilson

Laboratory No.: A-11010708-001
Sample I.D.: IUA0604-03 (Outfall 019)

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 (rain runoff sample).

Date Sampled: 01/07/11
Date Received: 01/07/11
Temp. Received: 5.8°C
Chlorine (TRC): 0.0 mg/l
Date Tested: 01/07/11 to 01/14/11

Sample Analysis: The following analyses were performed on your sample:

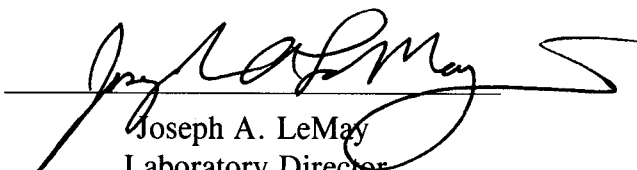
Fathead Minnow 96hr Percent Survival Bioassay (EPA Method 2000.0).
Ceriodaphnia dubia Survival and Reproduction Test (EPA Method 1002).

Attached are the test data generated from the analysis of your sample.

Result Summary:

Acute:	<u>Survival</u>	<u>TUa</u>
Fathead Minnow:	95%	0.41
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

FATHEAD MINNOW PERCENT SURVIVAL TEST

EPA Method 2000.0



Lab No.: A-11010708-001
 Client/ID: TestAmerica Outfall 019

Start Date: 01/07/2011

TEST SUMMARY

Species: *Pimephales promelas*.
 Age: 14 (1-14) days.
 Regulations: NPDES.
 Test solution volume: 250 ml.
 Feeding: prior to renewal at 48 hrs.
 Number of replicates: 2.
 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-110104.

TEST DATA

		°C	DO	pH	# Dead		Analyst & Time of Readings
					A	B	
INITIAL	Control	19.8	9.0	8.1	0	0	Rm 1500
	100%	19.8	7.8	7.7	0	0	
24 Hr	Control	20.2	7.6	7.7	0	0	Rm 1500
	100%	20.3	7.6	8.4	0	0	
48 Hr	Control	19.3	7.8	8.0	0	0	J 1400
	100%	19.6	7.0	8.6	0	1	
Renewal	Control	19.4	9.1	8.2	0	0	J 1400
	100%	19.9	7.9	8.2	0	0	
72 Hr	Control	19.3	7.7	7.9	0	0	J 1400
	100%	19.5	7.2	8.5	0	0	
96 Hr	Control	19.3	7.8	8.0	0	0	Rm 1500
	100%	19.2	6.4	8.4	0	0	

Comments:

Sample as received: Chlorine: 0.0 mg/l; pH: 7.7; Conductivity: 605 umho; Temp: 5.8°C;
 DO: 7.8 mg/l; Alkalinity: 176 mg/l; Hardness: 40 mg/l; NH₃-N: 0.4 mg/l.
 Sample aerated moderately (approx. 500 ml/min) to raise or lower DO? Yes / No
 Control: Alkalinity: 73 mg/l; Hardness: 90 mg/l; Conductivity: 300 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: 95 %



CERIODAPHNIA SURVIVAL AND REPRODUCTION TEST

- *Test and Results Summary*
- *Data Summary and Statistical Analyses*
- *Raw Test Data: Water Quality & Test Organism Measurements*

CERIODAPHNIA CHRONIC BIOASSAY EPA METHOD 1002.0



Lab No.: A-11010708-001
Client/ID: Test America – IUA0604-03 (Outfall 019)

Date Tested: 01/07/11 to 01/14/11

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-110104.

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%	22.8
100% Sample	100%	24.4
* Sample not statistically significantly less than Control.		

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 (22.8 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 = 13.8%)
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

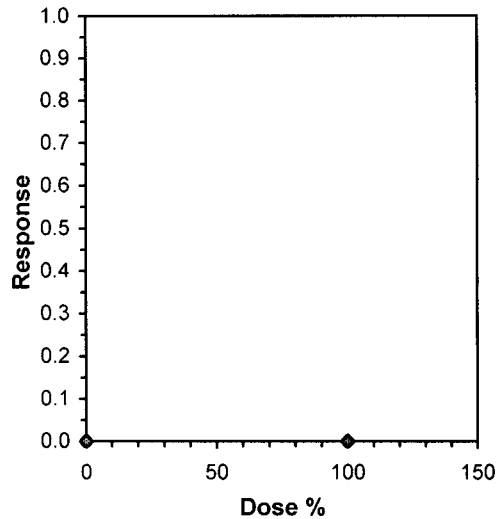
Start Date: 1/7/2011 15:00 Test ID: 11010708c Sample ID: Outfall 019
 End Date: 1/14/2011 14:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater
 Sample Date: 1/7/2011 08:59 Protocol: FWCH EPA Test Species: CD-Ceriodaphnia dubia
 Comments:

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 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		1
Treatments vs D-Control				

Point	%	SD	Linear Interpolation (200 Resamples)	
			95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Ceriodaphnia Survival and Reproduction Test-Reproduction

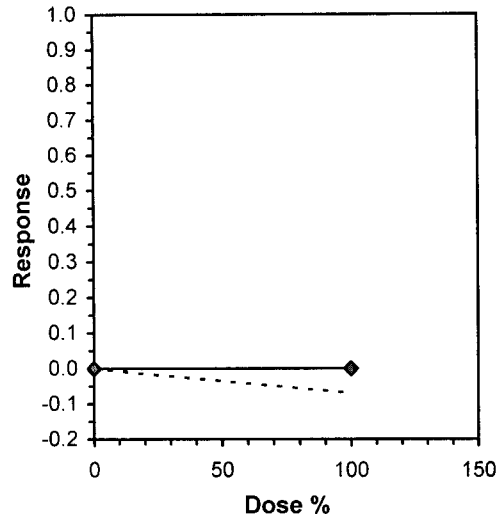
Start Date: 1/7/2011 15:00 Test ID: 11010708c Sample ID: Outfall 019
 End Date: 1/14/2011 14:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater
 Sample Date: 1/7/2011 08:59 Protocol: FWCH EPA Test Species: CD-Ceriodaphnia dubia
 Comments:

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	19.000	18.000	22.000	21.000	24.000	22.000	27.000	27.000	27.000	21.000
100	19.000	22.000	16.000	25.000	27.000	32.000	29.000	25.000	26.000	23.000

Conc-%	Mean	N-Mean	Transform: Untransformed					N	t-Stat	1-Tailed Critical	MSD	Isotonic	
			Mean	Min	Max	CV%	Mean					N-Mean	
D-Control	22.800	1.0000	22.800	18.000	27.000	14.591	10				23.600	1.0000	
100	24.400	1.0702	24.400	16.000	32.000	19.145	10	-0.882	1.734	3.145	23.600	1.0000	

Auxiliary Tests	Statistic	Critical	Skew	Kurt		
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.98436	0.905	-0.1545	-0.1463		
F-Test indicates equal variances (p = 0.33)	1.97189	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	3.14477	0.13793	12.8	16.4444	0.38927	1, 18

Linear Interpolation (200 Resamples)				
Point	%	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-11010708-001

Client ID: TestAmerica - Outfall 019

Start Date: 01/07/2011

		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:		Rm Rm		Rm Rm		Rm Rm		Rm Rm		Rm Rm		Rm Rm		Rm Rm	
# of Readings:		1500	1430	1430	1500	1500	1420	1430	1530	1530	1500	1500	1530	1530	1400
Control	DO	8.5	8.3	8.1	8.2	8.4	8.1	8.2	8.4	8.5	8.5	8.3	8.0	8.7	7.9
	pH	8.2	8.2	8.2	8.2	8.2	8.1	8.2	8.2	8.3	8.2	8.3	7.9	8.2	8.2
	Temp	25.5	24.7	24.7	24.8	24.2	24.7	24.2	24.5	25.2	24.4	25.3	24.9	25.0	24.5
100%	DO	7.8	8.0	8.3	8.0	8.5	7.8	8.6	8.6	10.0	8.8	9.4	8.2	10.3	8.0
	pH	7.4	8.6	7.6	8.6	7.9	8.6	8.1	8.7	7.8	8.6	8.0	8.7	8.0	8.6
	Temp	24.3	24.8	24.8	24.6	24.1	24.6	24.5	24.5	25.0	24.8	24.3	24.8	24.5	24.4

Additional Parameters	Control	100% Sample
Conductivity (umohms)	300	600
Alkalinity (mg/l CaCO ₃)	73	180
Hardness (mg/l CaCO ₃)	90	30
Ammonia (mg/l NH ₃ -N)	<0.1	0.4

Source of Neonates										
Replicate:	A	B	C	D	E	F	G	H	I	J
Brood ID:	1A	2B	3B	1D	1E	2F	3F	3H	1I	2J

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	Rm
	2	0	0	0	0	0	0	0	0	0	0	0	10	Rm
	3	4	0	0	3	0	0	0	0	0	0	7	10	Rm
	4	3	3	3	4	2	0	0	4	0	4	23	10	Rm
	5	0	5	6	0	7	5	5	7	5	6	46	10	Rm
	6	0	0	0	14	15	7	8	16	12	0	72	10	Rm
	7	12	10	13	0	0	10	14	16	10	11	80	10	Rm
	Total	19	18	22	21	24	22	27	27	27	21	228	10	Rm
100%	1	0	0	0	0	0	0	0	0	0	0	0	10	Rm
	2	0	0	0	0	0	0	0	0	0	0	0	10	Rm
	3	0	3	4	0	0	0	0	3	0	0	10	10	Rm
	4	3	3	4	4	4	0	0	5	5	4	37	10	Rm
	5	5	0	0	7	7	5	6	0	7	0	37	10	Rm
	6	0	16	8	0	16	11	12	17	0	6	86	10	Rm
	7	11	0	0	14	14	16	11	0	14	13	79	10	Rm
	Total	19	22	16	25	27	32	29	25	26	23	249	10	Rm

Circled fourth brood not used in statistical analysis.

7th day only used if <60% of the surviving control females have produced their third brood.



***CHAIN
OF
CUSTODY***

CHAIN OF CUSTODY FORM

Client Name/Address:	MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007												
Test America Contact:	Debby Wilson												
Project:	Boeing-SSFL NPDES Quarterly Outfall 019 COMPOSITE												
Project Manager:	Bronwyn Kelly												
Sampler:	Rick Baranaga												
Phone Number:	(626) 568-6691												
Fax Number:	(626) 568-6515												
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Total Dissolved Metals: Cu, Pb, Hg, Cd, Se, Zn, Hardness as CaCO3	Total Organic Carbon	Gross Alpha(900.0), Gross Beta(900.0), Tritium (H-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)	Acute Toxicity	Cyanide	Chronic Toxicity	Comments
Outfall 019	W	1L Poly	1	1-7-2011 08:59	None	16	X						Filter w/in 24hrs of receipt at lab
Outfall 019	W	250 mL Glass	1		HCl	17		X					
Outfall 019	W	2.5 Gal Cube	1		None	18A			X				Unfiltered and unpreserved analysis
		500 mL Amber	1		None	18B							
Outfall 019	W	1 Gal Cube	1		None	19				X			
Outfall 019	W	\$500 mL Poly	1		NaOH	20					X		
Outfall 019	W	1 Gal Poly	1	1-7-2011 08:59	None	21						X	Only test if first or second rain events of the year
COC Page 2 of 3 and Page 2 of 3 are the composite samples for Outfall 019 for this storm event.													
These must be added to the same work order for COC Page 1 of 3 for Outfall 019 for the same event.													
Relinquished By	Date/Time	Received By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time	Relinquished By	Date/Time
Paul Brown	1-7-2011 11:25	Mark Combs	1-7-11 11:25	Mark Combs	1-7-11 12:45	Mark Combs	1-7-11 12:45	Mark Combs	1-7-11 11:25	Mark Combs	1-7-11 12:45	Mark Combs	1-7-11 12:45
Turn-around time (Check) <input checked="" type="checkbox"/> 10 Day <input type="checkbox"/> 72 Hour <input type="checkbox"/> 5 Day <input type="checkbox"/> Normal <input checked="" type="checkbox"/> X Sample Integrity (Check) <input checked="" type="checkbox"/> On Ice <input type="checkbox"/> X Data Requirements (Check) <input type="checkbox"/> All Level IV <input type="checkbox"/> NPDES Level IV <input checked="" type="checkbox"/> X													

ANALYSIS REQUIRED

SUBCONTRACT ORDER

TestAmerica Irvine

IUA0604

SENDING LABORATORY:

TestAmerica Irvine
17461 Derian Avenue, Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 260-3297
Project Manager: Debby Wilson

RECEIVING LABORATORY:

Aquatic Testing Laboratories-SUB
4350 Transport Street, Unit 107
Ventura, CA 93003
Phone : (805) 650-0546
Fax: (805) 650-0756

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: IUA0604-03	Water	Sampled: 01/07/11 08:59		
Bioassay-Acute 96hr	01/20/11 12:00	01/08/11 20:59		
Bioassay-7 dy Chrnrc	01/20/11 12:00	01/08/11 20:59		Cerio, EPA/821-R02-013, Sub to Aquatic testing
<i>Containers Supplied:</i>				
1 gal Poly (V)	1 gal Poly (W)			

Released By

Date

Received By

Date

[Signature] ATC 1-7-11 12:45

Released By

Date

Received By

Date



***REFERENCE
TOXICANT
DATA***

FATHEAD MINNOW ACUTE
Method 2000.0
Reference Toxicant - SDS



QA/QC Batch No.: RT-110104

TEST SUMMARY

Species: *Pimephales promelas*.
 Age: 13 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>1-4-11 1500</u>			<u>15-11 1400</u>					<u>1-6-11 1400</u>				
	<u>R</u>			<u>R</u>					<u>R</u>				
	°C	DO	pH	°C	DO	pH	# Dead		°C	DO	pH	# Dead	
A							B	A				B	
Control	<u>20.4</u>	<u>8.8</u>	<u>8.2</u>	<u>19.6</u>	<u>8.5</u>	<u>8.1</u>	<u>0</u>	<u>0</u>	<u>19.5</u>	<u>7.9</u>	<u>7.9</u>	<u>0</u>	<u>0</u>
1.0 mg/l	<u>20.4</u>	<u>8.8</u>	<u>8.2</u>	<u>19.6</u>	<u>8.5</u>	<u>8.1</u>	<u>0</u>	<u>0</u>	<u>19.5</u>	<u>7.9</u>	<u>8.0</u>	<u>0</u>	<u>0</u>
2.0 mg/l	<u>20.4</u>	<u>8.9</u>	<u>8.2</u>	<u>19.5</u>	<u>8.6</u>	<u>8.1</u>	<u>0</u>	<u>0</u>	<u>19.5</u>	<u>7.9</u>	<u>8.0</u>	<u>0</u>	<u>0</u>
4.0 mg/l	<u>20.4</u>	<u>8.9</u>	<u>8.2</u>	<u>19.5</u>	<u>8.7</u>	<u>8.1</u>	<u>0</u>	<u>0</u>	<u>19.4</u>	<u>7.8</u>	<u>8.0</u>	<u>0</u>	<u>0</u>
8.0 mg/l	<u>20.4</u>	<u>8.9</u>	<u>8.2</u>	<u>19.5</u>	<u>7.7</u>	<u>8.0</u>	<u>10</u>	<u>10</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

Date/Time:	RENEWAL			72 Hr					96 Hr				
	<u>1-6-11 1400</u>			<u>1-7-11 1500</u>					<u>1-8-11 1500</u>				
	<u>R</u>			<u>R</u>					<u>R</u>				
	°C	DO	pH	°C	DO	pH	# Dead		°C	DO	pH	# Dead	
A							B	A				B	
Control	<u>19.1</u>	<u>9.3</u>	<u>8.2</u>	<u>19.7</u>	<u>7.6</u>	<u>8.2</u>	<u>0</u>	<u>0</u>	<u>20.3</u>	<u>6.8</u>	<u>8.0</u>	<u>0</u>	<u>0</u>
1.0 mg/l	<u>19.1</u>	<u>9.3</u>	<u>8.2</u>	<u>19.7</u>	<u>7.8</u>	<u>8.1</u>	<u>0</u>	<u>0</u>	<u>20.3</u>	<u>7.0</u>	<u>8.0</u>	<u>0</u>	<u>0</u>
2.0 mg/l	<u>19.1</u>	<u>9.4</u>	<u>8.2</u>	<u>19.7</u>	<u>8.0</u>	<u>8.1</u>	<u>0</u>	<u>0</u>	<u>20.3</u>	<u>7.2</u>	<u>8.0</u>	<u>0</u>	<u>0</u>
4.0 mg/l	<u>19.1</u>	<u>9.4</u>	<u>8.2</u>	<u>19.6</u>	<u>7.9</u>	<u>8.1</u>	<u>0</u>	<u>0</u>	<u>20.3</u>	<u>7.4</u>	<u>8.0</u>	<u>0</u>	<u>0</u>
8.0 mg/l	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

Comments: Control: Alkalinity: 73 mg/l; Hardness: 90 mg/l; Conductivity: 300 umho.
 SDS: Alkalinity: 73 mg/l; Hardness: 89 mg/l; Conductivity: 303 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: 1/4/2011 15:00 Test ID: RT110104 Sample ID: REF-Ref Toxicant
 End Date: 1/8/2011 15:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SDS-Sodium dodecyl sulfate
 Sample Date: 1/4/2011 Protocol: ACUTE-EPA-821-R-02-012 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	1.0000	1.0000
8	0.0000	0.0000

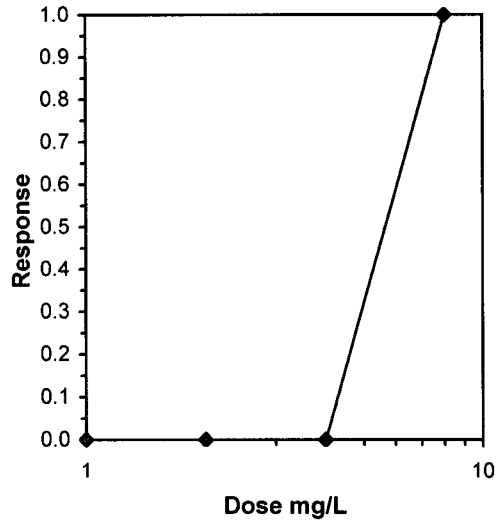
Conc-mg/L	Mean	N-Mean	Transform: Arcsin Square Root					N	Number Resp	Total Number
			Mean	Min	Max	CV%				
D-Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0	20	
1	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0	20	
2	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0	20	
4	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0	20	
8	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				

Graphical Method

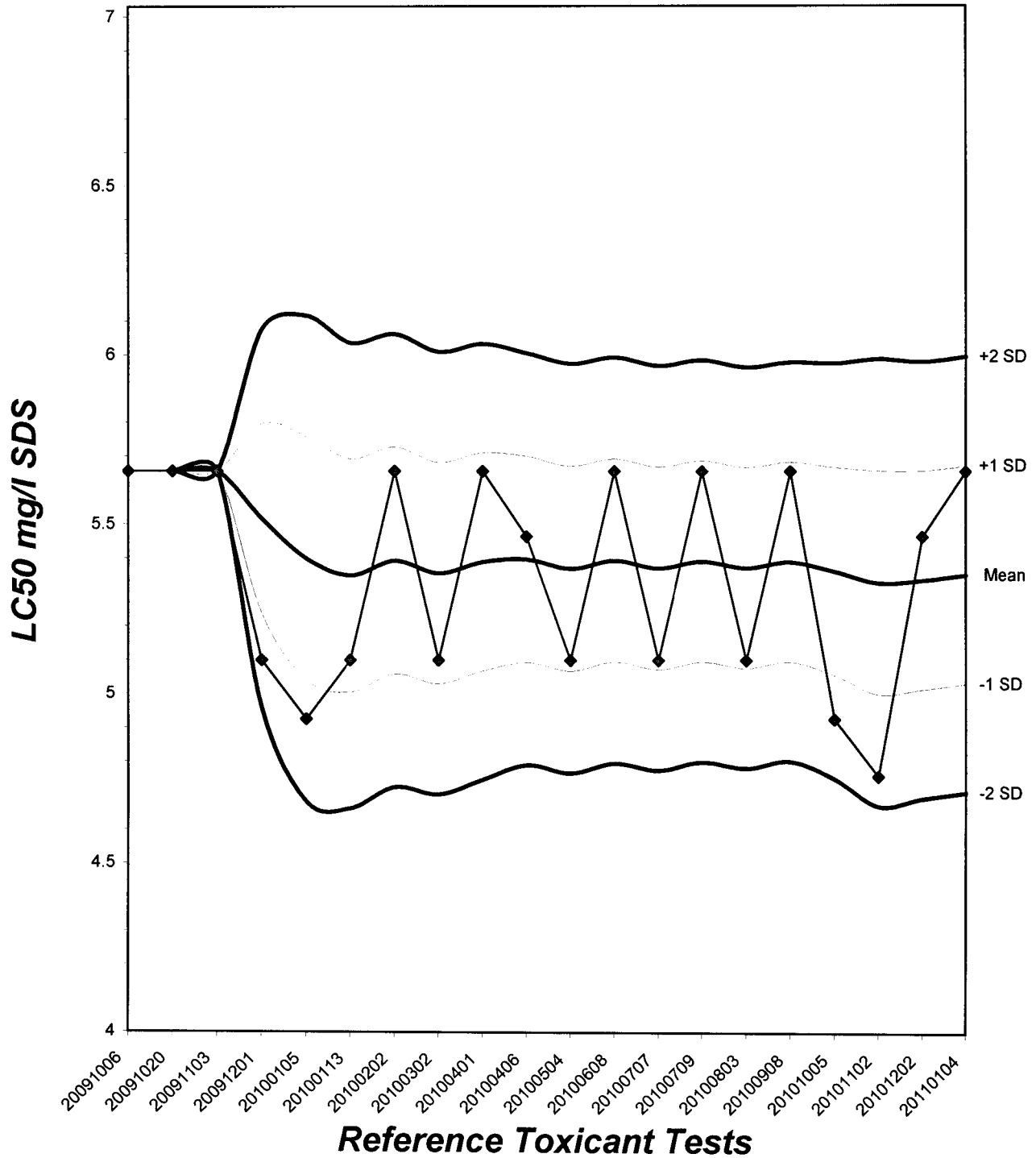
Trim Level **EC50**
 0.0% 5.6569

5.6569



Fathead Minnow Acute Laboratory Control Chart

CV% = 6.01



TEST ORGANISM LOG



FATHEAD MINNOW - LARVAL (*Pimephales promelas*)

QA/QC BATCH NO.: RT-110104

SOURCE: In-Lab Culture

DATE HATCHED: 12-2-10

APPROXIMATE QUANTITY: 40

GENERAL APPEARANCE: good

MORTALITIES 48 HOURS PRIOR TO
TO USE IN TESTING: 0

DATE USED IN LAB: 1/4/11

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.: 20.4 °C

pH: 8.2

Ammonia: 20.1 mg/l NH₃-N

DO: 8.8 mg/l

Alkalinity: 73 mg/l

Hardness: 90 mg/l

READINGS RECORDED BY: _____

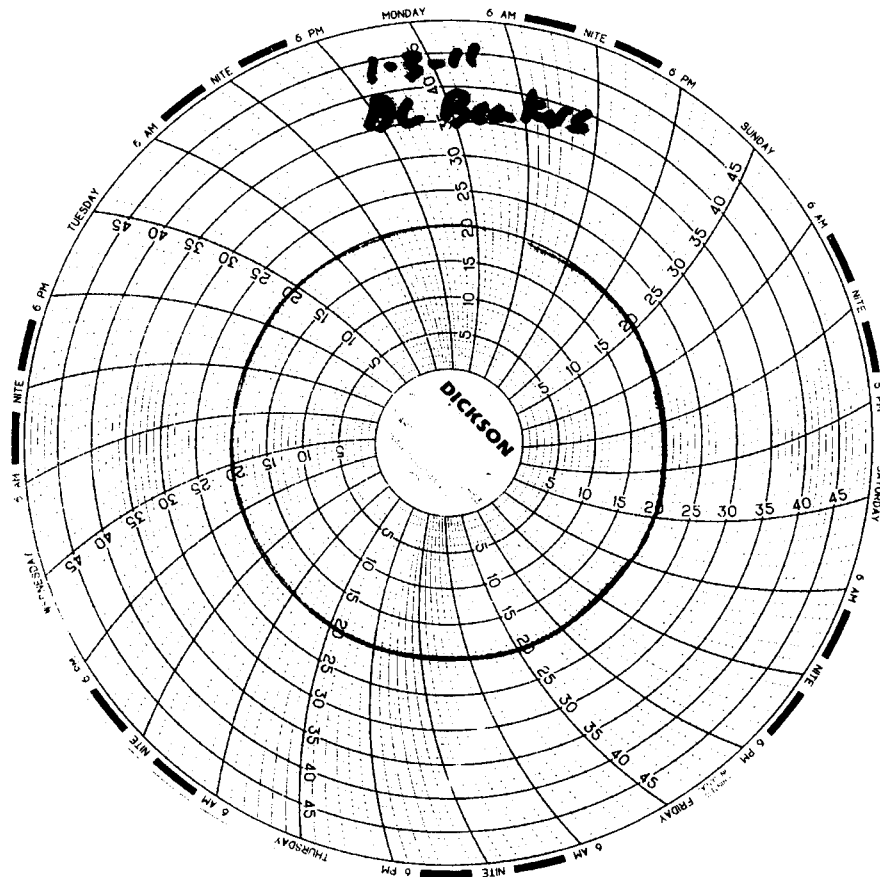
DATE: 11-1-5-11

Test Temperature Chart

Test No: RT-110105

Date Tested: 01/04/11 to 01/08/11

Acceptable Range: $20 \pm 1^\circ\text{C}$





CERIODAPHNIA SURVIVAL AND REPRODUCTION TEST

- ***Test and Results Summary***
- ***Data Summary and Statistical Analyses***
- ***Raw Test Data: Water Quality &
Test Organism Measurements***

CERIODAPHNIA CHRONIC BIOASSAY
EPA METHOD 1002.0
REFERENCE TOXICANT - NaCl



QA/QC Batch No.: RT-110104

Date Tested: 01/04/11 to 01/10/11

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: 6 days.
 Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survival		Mean Number of Young Per Female	
Control	100%		21.4	
0.25 g/l	100%		23.7	
0.5 g/l	100%		22.4	
1.0 g/l	100%		13.3	*
2.0 g/l	100%		2.7	*
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	2.8 g/l
Reproduction IC25	0.80 mg/l

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥80%	Pass (100% Survival)
≥ 15 young per surviving control female	Pass (21.4 young)
≥60% surviving controls had 3 broods	Pass (90% with 3 broods)
PMSD <47% for reproduction	Pass (PMSD = 16.8%)
Stat. sig. diff. conc. relative difference > 13%	Pass (Stat. sig. diff. conc. Relative difference = 37.9%)
Concentration response relationship acceptable	Pass (Response curve normal)

CERIODAPHNIA DUBIA CHRONIC BIOASSAY
Reference Toxicant - NaCl
Reproduction and Survival Raw Data Sheet



QA/QC No.: RT-110104

Start Date:01/04/2011

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	R
	3	0	0	0	0	0	0	0	0	0	0	0	10	R
	4	3	4	4	3	2	3	3	2	2	3	29	10	R
	5	7	6	6	8	6	7	6	6	6	7	65	10	R
	6	11	14	10	13	12	15	14	0	15	16	120	10	R
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	21	24	20	24	20	25	23	8	23	26	214	10	R
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	R	
	3	0	0	0	0	3	0	0	0	0	3	10	R	
	4	3	4	3	2	0	3	4	2	3	3	27	10	R
	5	7	7	6	6	7	6	8	6	7	8	68	10	R
	6	12	12	17	14	15	12	17	10	14	16	139	10	R
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	22	23	26	22	25	21	29	18	24	27	237	10	R
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	R	
	3	0	0	0	0	0	0	0	0	4	4	10	R	
	4	4	3	4	3	2	4	2	2	3	0	27	10	R
	5	7	9	6	6	5	7	7	6	7	9	69	10	R
	6	10	12	15	10	12	14	16	12	10	13	124	10	R
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	21	24	25	19	19	29	25	20	20	26	224	10	R

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-110104

Start Date:01/04/2011

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	R
	2	0	0	0	0	0	0	0	0	0	0	0	10	R
	3	0	0	0	0	0	0	0	0	0	0	0	10	R
	4	2	3	2	2	4	2	3	4	3	3	28	10	R
	5	0	4	4	3	5	4	4	4	0	5	33	10	R
	6	10	7	6	0	8	10	11	10	10	0	73	10	R
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	12	14	12	5	17	16	18	18	13	8	134	10	R
2.0 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	R	
	3	0	0	0	0	0	0	0	0	0	0	10	R	
	4	0	2	0	0	3	0	0	0	2	0	7	10	R
	5	3	0	3	2	0	2	0	3	0	2	15	10	R
	6	0	3	0	0	2	0	0	0	0	0	5	10	R
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	3	5	3	2	5	2	0	3	2	2	27	10	R
4.0 g/l	1	X	X	X	X	X	X	X	X	X	0	0	R	
	2	-	-	-	-	-	-	-	-	-	-	-	-	
	3	-	-	-	-	-	-	-	-	-	-	-	-	
	4	-	-	-	-	-	-	-	-	-	-	-	-	
	5	-	-	-	-	-	-	-	-	-	-	-	-	
	6	-	-	-	-	-	-	-	-	-	-	-	-	
	7	-	-	-	-	-	-	-	-	-	-	-	-	
	Total	0	0	0	0	0	0	0	0	0	0	0	0	R

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 Survival and Reproduction Test-Survival Day 6

Start Date: 1/4/2011 11:00 Test ID: RT110104c Sample ID: REF-Ref Toxicant
 End Date: 1/10/2011 12:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: NACL-Sodium chloride
 Sample Date: 1/4/2011 Protocol: FWCH EPA 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	1.0000	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

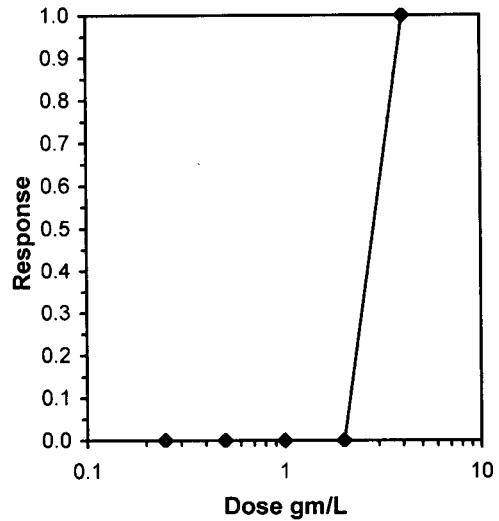
Conc-gm/L	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical	Number Resp	Total Number
D-Control	1.0000	1.0000	0	10	10	10			0	10
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
1	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
2	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	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				

Graphical Method

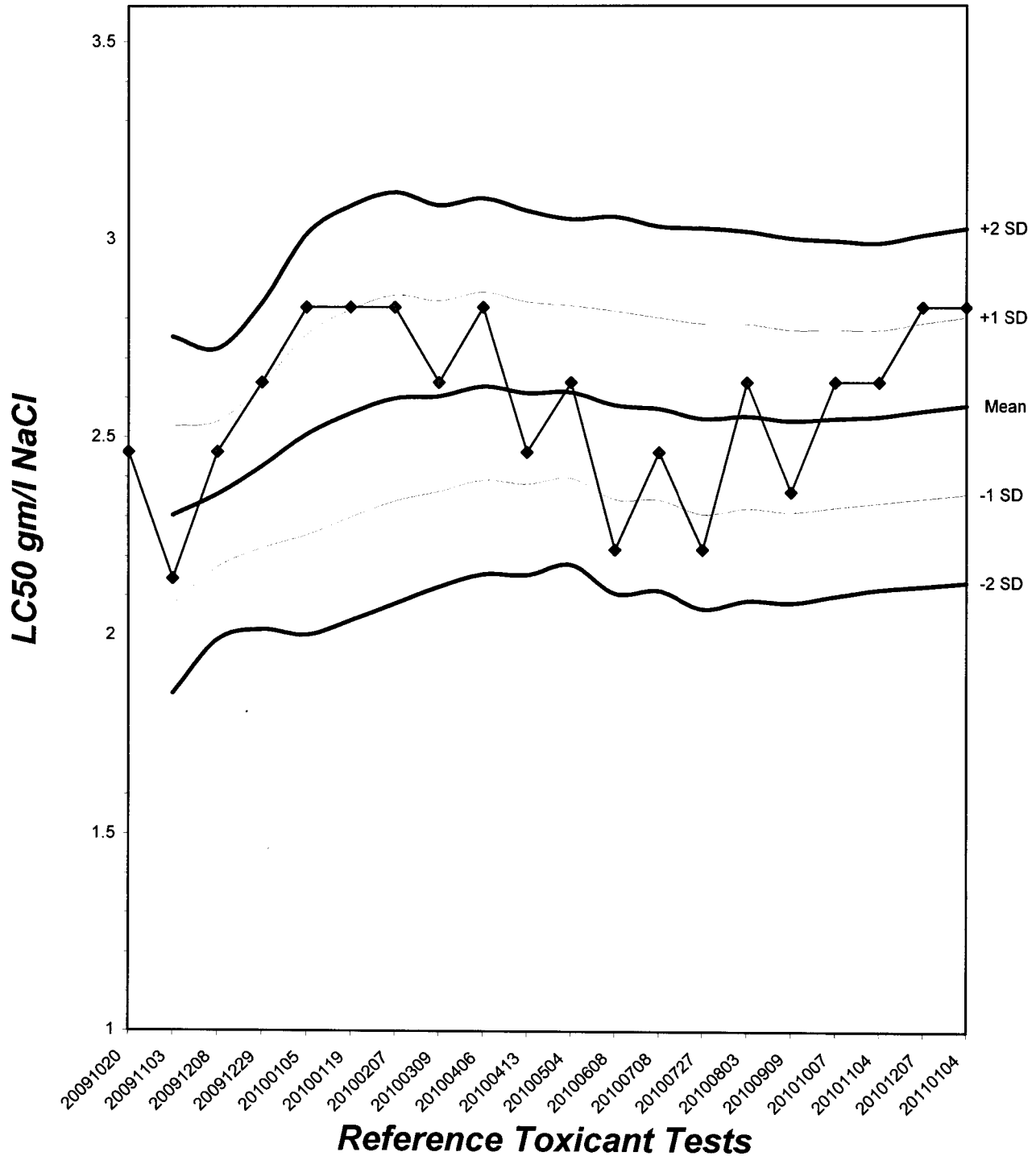
Trim Level	EC50
0.0%	2.8284

2.8284



Ceriodaphnia Chronic Survival Laboratory Control Chart

CV% = 8.66



Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date: 1/4/2011 11:00 Test ID: RT110104c Sample ID: REF-Ref Toxicant
 End Date: 1/10/2011 12:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: NACL-Sodium chloride
 Sample Date: 1/4/2011 Protocol: FWCH EPA Test Species: CD-Ceriodaphnia dubia

Comments:

Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	21.000	24.000	20.000	24.000	20.000	25.000	23.000	8.000	23.000	26.000
0.25	22.000	23.000	26.000	22.000	25.000	21.000	29.000	18.000	24.000	27.000
0.5	21.000	24.000	25.000	19.000	19.000	25.000	25.000	20.000	20.000	26.000
1	12.000	14.000	12.000	5.000	17.000	16.000	18.000	18.000	13.000	8.000
2	3.000	5.000	3.000	2.000	5.000	2.000	0.000	3.000	2.000	2.000
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							Rank Sum	1-Tailed Critical	Isotonic	
	Mean	N-Mean	Mean	Min	Max	CV%	N			Mean	N-Mean
D-Control	21.400	1.0000	21.400	8.000	26.000	23.949	10			22.550	1.0000
0.25	23.700	1.1075	23.700	18.000	29.000	13.498	10	117.50	76.00	22.550	1.0000
0.5	22.400	1.0467	22.400	19.000	26.000	12.662	10	106.50	76.00	22.400	0.9933
*1	13.300	0.6215	13.300	5.000	18.000	32.301	10	63.50	76.00	13.300	0.5898
*2	2.700	0.1262	2.700	0.000	5.000	55.349	10	55.00	76.00	2.700	0.1197
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 non-normal distribution (p <= 0.05)	0.91212	0.947	-1.3784	3.64435
Bartlett's Test indicates equal variances (p = 0.01)	12.4505	13.2767		

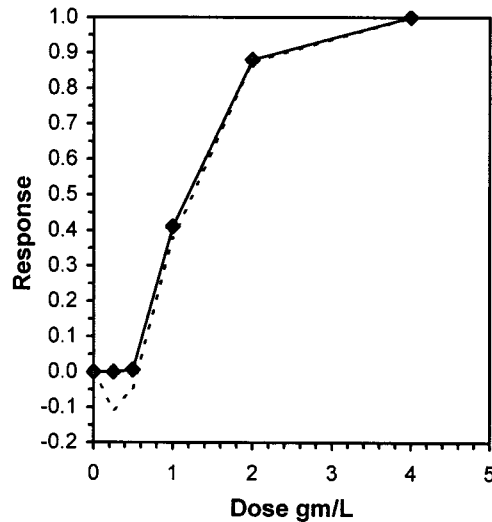
Hypothesis Test (1-tail, 0.05) NOEC LOEC ChV TU

Steel's Many-One Rank Test 0.5 1 0.70711

Treatments vs D-Control

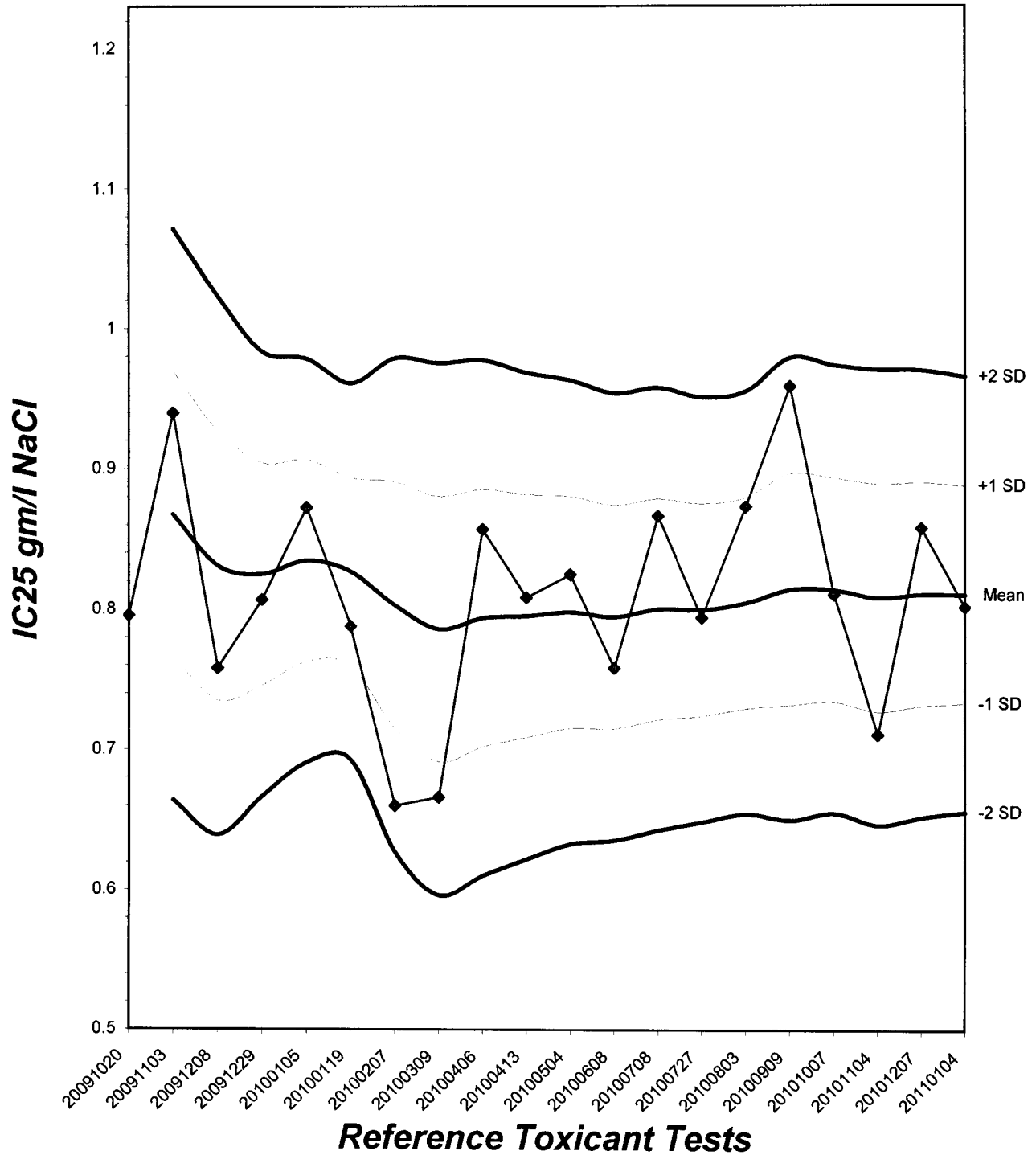
Linear Interpolation (200 Resamples)

Point	gm/L	SD	95% CL		Skew
IC05	0.5537	0.0649	0.3513	0.5827	-1.2814
IC10	0.6157	0.0467	0.5012	0.6654	-0.7928
IC15	0.6776	0.0473	0.5652	0.7499	-0.0788
IC20	0.7396	0.0514	0.6269	0.8345	0.3817
IC25	0.8015	0.0576	0.6887	0.9191	0.6376
IC40	0.9874	0.0860	0.8743	1.1742	0.5955
IC50	1.1910	0.1048	0.9736	1.3514	-0.2328



Ceriodaphnia Chronic Reproduction Laboratory Control Chart

CV% = 9.58



CERIODAPHNIA DUBIA CHRONIC BIOASSAY

Reference Toxicant - NaCl Water Chemistries Raw Data Sheet



QA/QC No.: RT-110104

Start Date: 01/04/2011

		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:		Rm	Rm	Rm	Rm	Rm	Rm	Rm	Rm	Rm	Rm	Rm	Rm	-	-
Time of Readings:		1100	1200	1200	1200	1200	1130	1130	1200	1200	1100	1100	1200	-	-
Control	DO	8.9	9.2	8.4	8.9	8.7	8.5	8.2	8.3	8.1	7.9	8.2	7.8	-	-
	pH	8.2	8.1	8.2	8.2	8.3	8.0	8.3	8.1	8.2	8.2	8.2	8.2	-	-
	Temp	24.8	24.4	24.2	24.2	24.6	24.1	25.2	24.0	24.7	24.6	24.1	24.3	-	-
0.25 g/l	DO	8.9	9.1	8.5	8.8	8.8	8.5	8.2	8.3	8.1	7.7	8.1	7.8	-	-
	pH	8.2	8.1	8.3	8.2	8.3	8.0	8.3	8.1	8.2	8.1	8.2	8.1	-	-
	Temp	24.8	24.5	24.2	24.6	24.6	24.6	25.2	24.3	24.7	24.7	24.2	24.3	-	-
0.5 g/l	DO	8.9	9.2	8.6	8.9	8.8	8.6	8.2	8.4	8.1	7.9	8.2	7.8	-	-
	pH	8.2	8.2	8.3	8.2	8.3	8.0	8.3	8.1	8.2	8.1	8.2	8.1	-	-
	Temp	24.8	24.8	24.2	24.7	24.6	24.6	25.2	24.4	24.7	24.7	24.1	24.4	-	-
1.0 g/l	DO	8.9	9.3	8.6	8.7	8.9	8.6	8.2	8.4	8.1	7.7	8.1	7.8	-	-
	pH	8.2	8.2	8.3	8.2	8.3	8.1	8.3	8.1	8.2	8.1	8.2	8.1	-	-
	Temp	24.9	24.7	24.2	24.7	24.7	24.5	25.2	24.4	24.8	24.9	24.3	24.5	-	-
2.0 g/l	DO	8.9	9.3	8.7	8.7	9.0	8.6	8.2	8.3	8.1	7.7	8.0	7.8	-	-
	pH	8.2	8.2	8.3	8.2	8.2	8.1	8.3	8.1	8.2	8.1	8.2	8.1	-	-
	Temp	24.9	24.8	24.1	24.6	24.8	24.5	25.2	24.4	24.9	24.9	24.2	24.5	-	-
4.0 g/l	DO	8.8	9.4	-	-	-	-	-	-	-	-	-	-	-	-
	pH	8.1	8.2	-	-	-	-	-	-	-	-	-	-	-	-
	Temp	25.0	24.6	-	-	-	-	-	-	-	-	-	-	-	-

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)	300	303	300	6510	3280	3400
Alkalinity (mg/l CaCO ₃)	73	74	73	75	74	74
Hardness (mg/l CaCO ₃)	90	89	89	93	91	90

Source of Neonates

Replicate:	A	B	C	D	E	F	G	H	I	J
Brood ID:	2A	2B	1C	1D	3E	1F	1G	1H	1J	3J

Test Temperature Chart

Test No: RT-110104

Date Tested: 01/04/11 to 01/10/11

Acceptable Range: 25 \pm 1°C

